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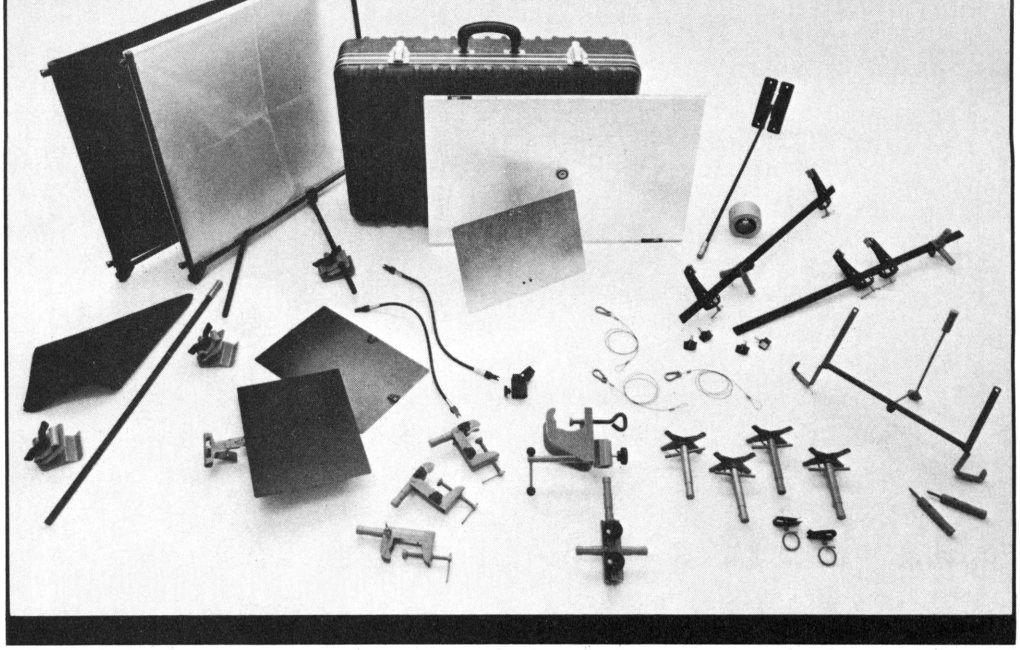

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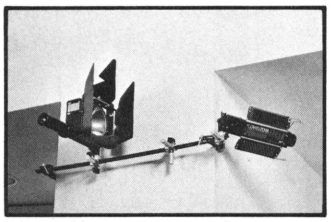
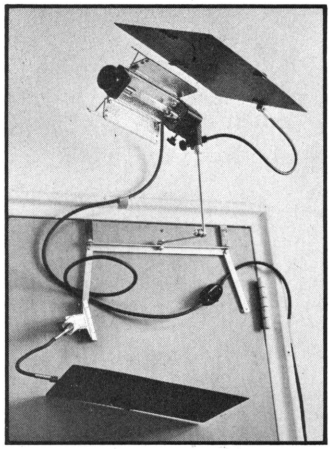
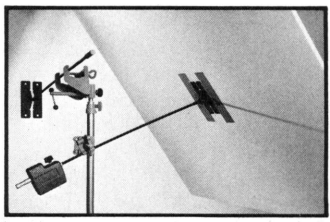


Flags shadow light secured by Tota-mount.



Maxa-mount, Grip and Lobo position reflector-panels, props and products.



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The International Journal of Film and Video Production Techniques

July 1986 Vol. 67 No. 7

American Cinematographer

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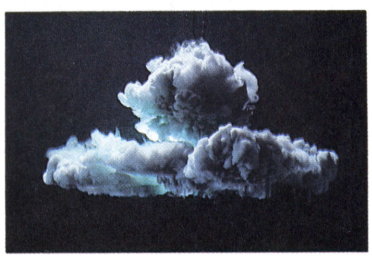

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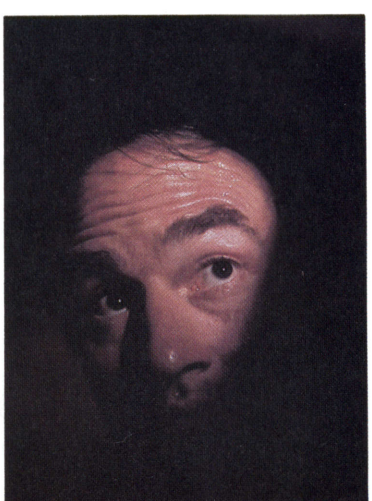

On Our Cover:
Craig Nelson, who plays *Poltergeist*'s Steve Freeling, peers out in terror. Photo by Larry Barbier

Dave Knox
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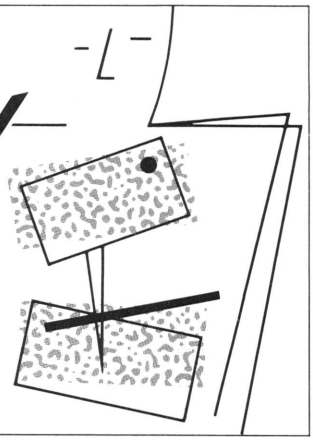

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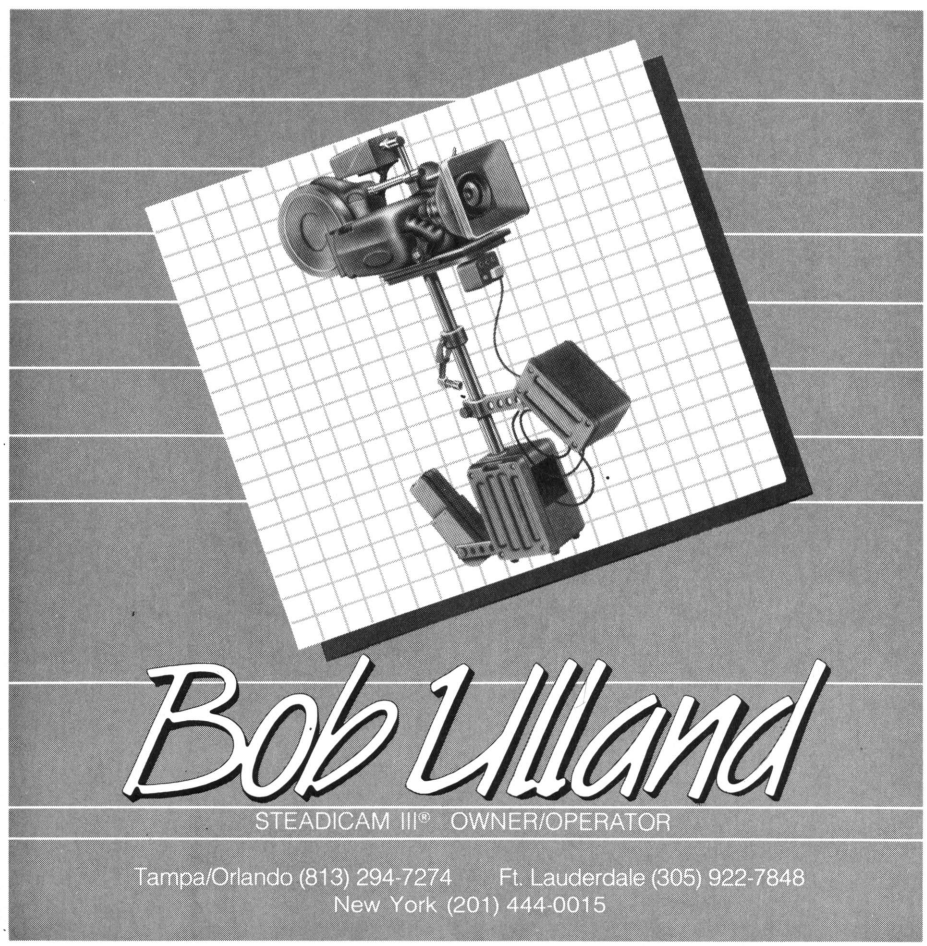

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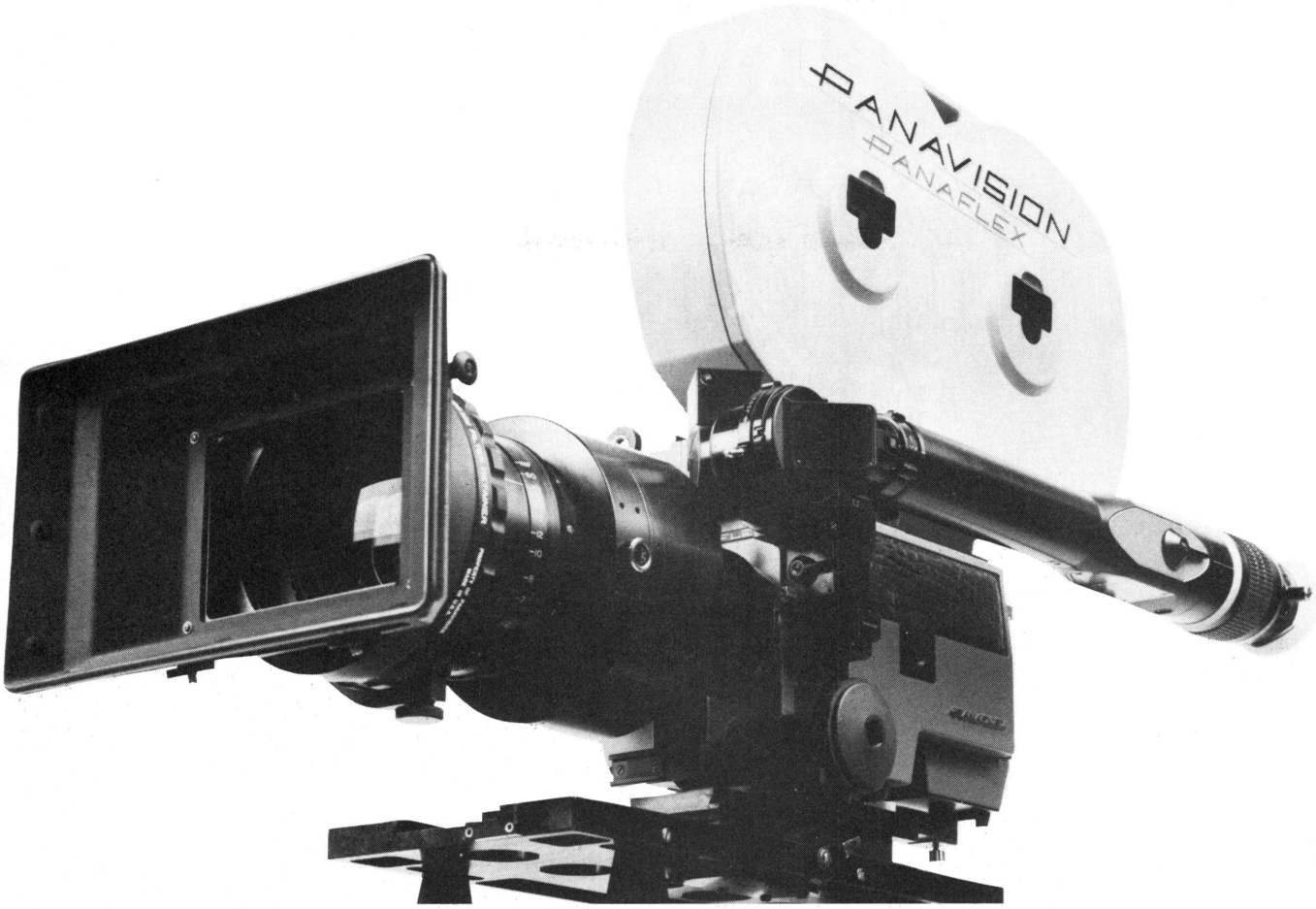

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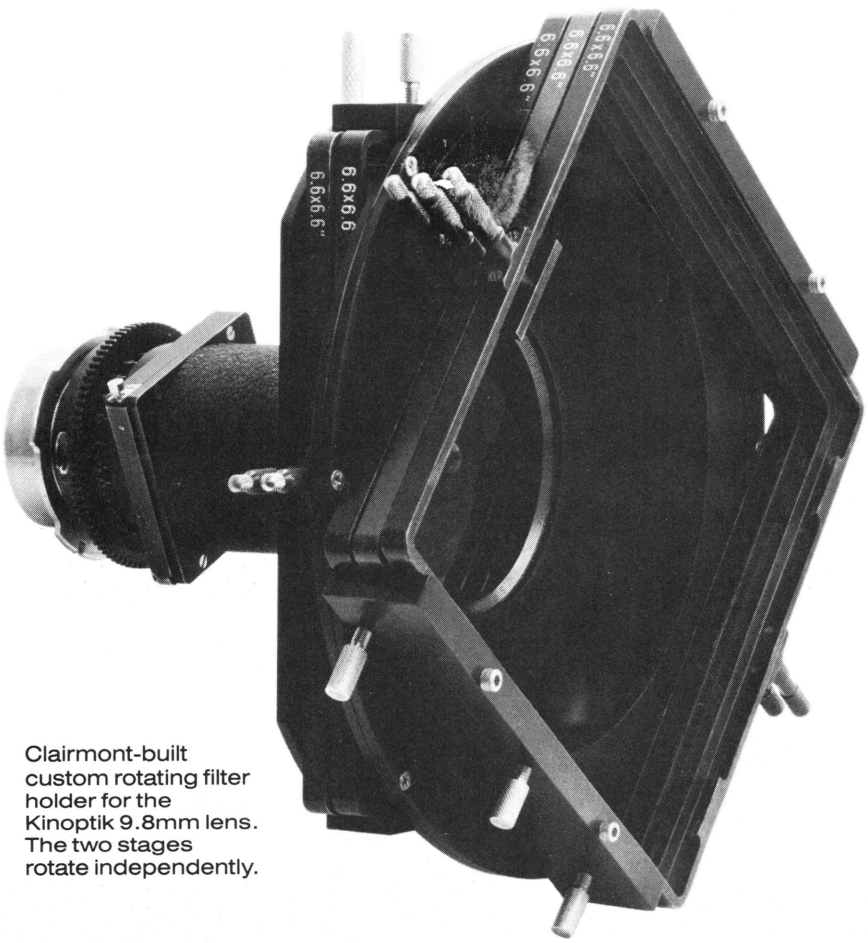


Clairmont-built custom rotating filter holder for the Kinoptik 9.8mm lens. The two stages rotate independently.

We have about 160 different types of Harrison & Harrison filter; about 180 types of Tiffen. Our filters come from seven different manufacturers, in sixteen sizes.

Widest range and variety of filters in the World. By far.

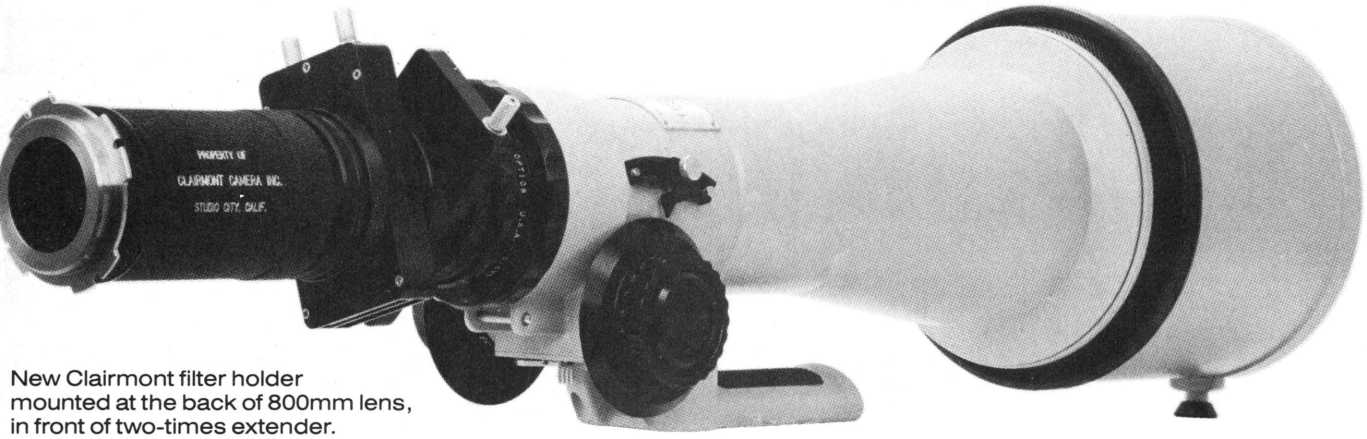
Equipment *in depth* is the way we do things. Filter choice is part of that. Some of our filters are made in special shapes and sizes, just for us. There's a much bigger selection at Clairmont than anywhere else in the World.

Our filter system includes ways to put our filters on all our lenses. With the Clairmont mounting system, you can put as many as six filters on every focal length from 9.8mm to 1600mm. With most focal lengths, you can mount seven.

All our filter-holders have multiple rotating stages. You can slide a filter on in seconds and set it to any angle. That includes polarizers and grads on the 9.8mm Kinoptik and the 1600mm Canon.

Custom Clairmont rotating holder for 9.8

Our holder for the Kinoptik lets you mount five square 6.6 filters



New Clairmont filter holder mounted at the back of 800mm lens, in front of two-times extender.

in two rotating stages. And you can insert a 2×2 inch filter inside the lens. Total: six filters. As you can see, our big 6.6 frame gives you plenty of room to move a grad across, from any angle.

Expanded 6.6 Box adds 3 more filters

The standard ARRI 6.6 Matte Box has a rotating stage that accepts three square filters. You can also mount a rotating round filter at the back. Our expanded 6.6 Matte Box has an additional rotating stage that accepts three more square filters. Total: seven filters.

New Clairmont rear-mounted telephoto rotating stages

As you know, effects filters don't work in front of very long lenses. And even *solid* filters, in front, degrade the image. So people use up to three 40.5mm round filters screwed inside the backs of the long Canons and Nikons.

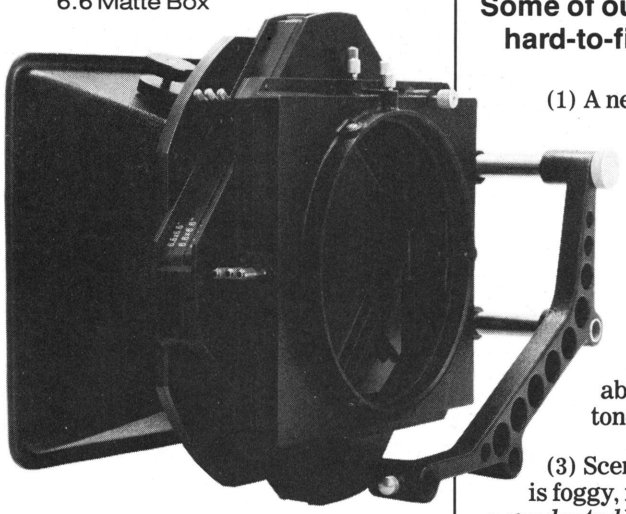
Screwing around

That means disconnecting the lens from the camera, reaching inside, screwing and unscrewing. A slow business, especially when the sun's going down. Rear screw-ins also mean you can't use polarizers and grads. Well, now you can.

Speed

With our new Telephoto Filter Unit, you don't have to remove the lens from the camera, unless you want more than three filters. This new Clairmont Unit has three rectangular rotating stages. Our custom filters (in trays) slide right in.

Clairmont expanded 6.6 Matte Box



Accuracy and control

There are knobs on the rotating stages. Turning them lets you slowly move an effect filter across the frame—and see the result in the viewfinder. And you can rotate a polarizer.

Which lenses?

This new Telephoto Filter Unit works with Nikon 400mm and 600mm lenses; and it works with Canon 500mm, 600mm and 800mm lenses. With the excellent extender made by Century Precision, the longest Canon becomes a 1600mm.

Some of our new and unusual hard-to-find effects filters:

(1) A new Day-For-Night that *doesn't* make closeup faces look blue. With this one, you keep your 85 filter on the lens.

(2) The Enhancer makes reds, oranges and yellows really *pop*, without a noticeable effect on the cooler tones in the image.

(3) Scenic Fog. Background is foggy, foreground less so. It's a *graduated* Fog, denser in the sky area at frame top. Five densities.

(4) Black SupaFrost. No highlight spill; definition and focus affected less than with a diffusion filter. This one comes in seven densities.

(5) Diffusion Wedge. It's fifteen inches long; diffusion intensity varies along its length. You can vary the diffusion *during* the shot.

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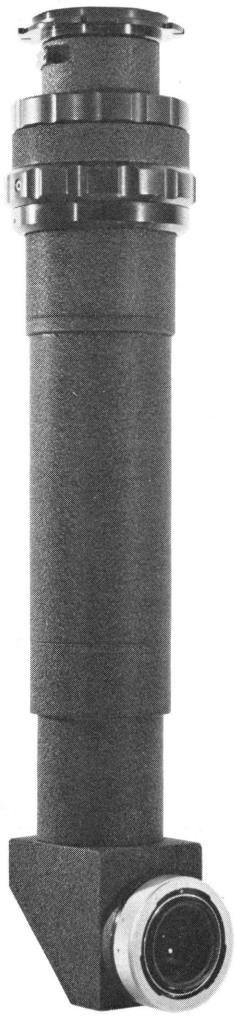

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Letters

Reunion

There must be many ex-students of the London International Film School (and its predecessor schools, The London School of Film Technique and London Film School) who are regular readers of your magazine and who perhaps have noted from our advertising that the school is still thriving. I am writing, therefore, in the hopes of contacting as many former students and staff of these schools as possible.

The school had its origins in 1956, when a very small scale film course at the Heatherley School of Fine Art, split off to form the L.S.F.T. After a short period, trying to operate in a derelict greengrocer's shop in Pimlico, they moved to Brixton. From such unpromising beginnings the present school developed.

In September 1986, the school will be inaugurating a complete academic year of celebrations and fund-raising, to mark 30 years of its existence.

At the time of writing this letter, our plans are in the earliest stages, but we hope to organize a grand international reunion for all ex-students and former members of staff. For this to be possible, it will be necessary to contact as many alumni as possible, as soon as possible, and I hope that all graduates of L.S.F.T., L.F.S. and L.I.F.S., who read this letter, will contact me at the school, so that we can organize not only the reunion, but also the many other events we have in mind for our thirtieth anniversary year.

—Phil Mottram,
Administrator.
London International Film School
24 Shelton St, London WC2H 9HP

Historical Observation

I've only now caught up with your excellent article on *Crime Without Passion* in a friend's copy of the October 1985 issue. Bravo! Thanks for details which have helped me to appreciate *Crime Without Passion* even more. I appreciate your solid research, illustrations and news about a film usually written about in too brief detail in recollections about Ben Hecht. Good for you for trying the less than obvious.

Among the many lessons a 52-year old picture provides for today's filmmakers is one of being vastly entertaining, and in only 80 minutes. Too bad they seem not to have learned from the film's imaginative production economies.

—John West
Chicago, Illinois

'Inferno' Inquiry

As a layman-enthusiast I have always enjoyed your excellent magazine. A particular favorite of mine is the series of articles about films of the past.

I am hoping that some demon research team can put together an article about the 1935 Fox film *Dante's Inferno*; in particular its amazing Inferno sequence. It seems to me that of all the great cinematographic and special effects achievements of the '30s, this was the most awesome.

Any hope for an article on this film in the near future?

—Donald Hatch
San Francisco

Dante's Inferno is on our list.

Corrections

Some corrections to the *Dinosaur!* piece in the April issue are in order. "Mary" Brennis should have been Marty Brennis, a typo.

While Phil Tippett spearheaded the creature shop during the production of JEDI, the Ewoks were the work of Stuart Freeborn in England. Camera blurs were introduced on the *Dinosaur* animation by mounting the camera on a geared head, not the figurines. The sauropod's head was no bigger than the first digit of your baby finger.

Lastly, Tippett's 12-minute production of *Prehistoric Beast* is absolutely stunning. I was able to see itafter the article was finished.

—Paul Mandell
New York City

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Contrast Corrector Technology

Distinctive highlights are brought out by Editel contrast corrector.* Below: *Before corrector process was applied to scene.

The film and video honeymoon continues with an additional "blessing" recently bestowed on the marriage by Editel/Los Angeles, a leading video post-production facility.

Developed by Editel telecine engineer Dick Caine, and launched late last year, the contrast corrector is fast becoming a savior of film producers, directors and cinematographers by offering electronic contrast correction as an option to expensive re-shoots and re-transfers.

One of Hollywood's most progressive facilities, Editel/LA currently offers the service exclusively on the West Coast. The contrast corrector performs its magic out of Editel's telecine room under the careful scrutiny of Dick Caine and colorist Steve Bowen.

In operation, the contrast corrector zeroes in on the "gray scale" to correct color and light problems. The delicate operation is achieved during film-to-tape transfer on the Rank Cintel flying spot scanner and Dubner color correction process. Once the signal has been corrected, it can be recorded to any tape format.

According to Caine, "All colors have a gray scale and our contrast corrector provides the ability to move color into its proper position on the gray scale. If you view a scene," he explained, "and film or photograph it in black and white, the colors will have a black and white rendition. When color is added, of course, then we have a color picture."

Caine further explained that the contrast corrector is able to reconstruct the vital gray scale to the point where, for example, the color red will have the correct amount of black and white content it possessed when originally photographed.

Bowen adds, "The contrast corrector enables us to re-structure the basic gray scale in the mid-range between black and white." To date Editel's contrast corrector has proven not only a life saver for color and/or light troubled commercials but also for theatrical release prints targeted for the booming video cassette market. "We've used it extensively in this area," said Bowen, adding that, "we prefer to transfer from interpositive or negative as those formats provide more latitude. However, what we usually get, particularly with foreign films, is just the print."

The contrast corrector assists enormously in the transfer of theatrical prints as it gives Bowen and Caine far more range with which to work. "We can enhance a considerable amount of detail in films, which is usually lost 'in the black' during the traditional transfer process," Bowen stated. "When we work from a print, then we use the contrast corrector," he said.

The contrast corrector was first used late last year on an ABC promo and a "Dynasty" summer re-run promo spot. "An expensive re-shoot and re-transfer would have been the alternative on each respective occasion," Dick Caine explained.

The "Dynasty" commercial, featuring two of the popular series' stars talking in the foreground while standing at the foot of a stairway, was originally lensed against a huge backlit window. During transfer it was dis-

Arriflex congratulates
David Watkin
on winning the 1985
Oscar for Best Cinematography.

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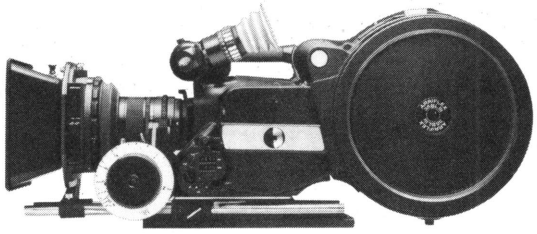

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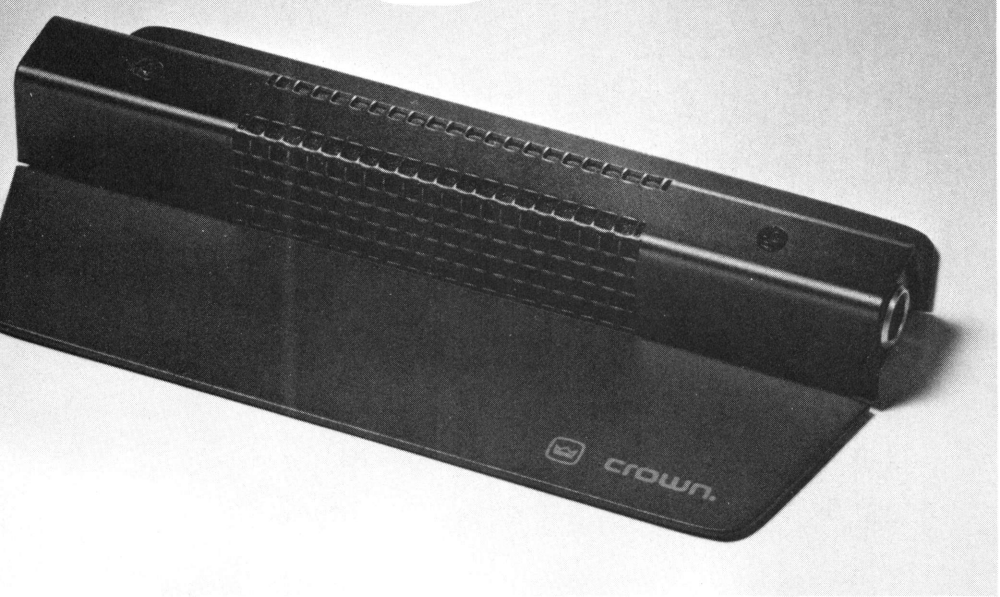
If it's worth doing, it's worth doing right.



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It's no surprise that when the key engineers of our PZM® microphone technology set their sights on combining the benefits of the boundary effect with unidirectionality, the fruits of their efforts would be nothing less than superior.

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Introducing the PCC™-160 Phase Coherent Cardioid™ from Crown.

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And because the microphone is mounted on a boundary, direct and reflected sounds arrive at the diaphragm in-phase. The result...wide, smooth frequency response free of tonal coloration or unnatural sound which can occur with conventional microphones.

Self-contained electronics eliminate the need for a sometimes awkward in-line preamp box. The PCC-160 can be powered directly from the console or other remote power source. Or if battery power is convenient, a battery supply unit can be inserted anywhere in the mike line...right up to the console or mixer.

For maximum flexibility, the PCC-160 features an exclusive three-way "bass tilt" switch which allows you to tailor, up or down, the low-end response for special applications or unusual boundary sizes.

Due to its low profile and "go away gray" finish, the PCC-160 microphone becomes nearly invisible in use, making it ideal for the stage, newsroom or lectern top.

But beneath its cloak of dark gray, the PCC-160 is protected by a heavy-gauge, all-steel body, tough enough to stand up to even the most severe abuse.

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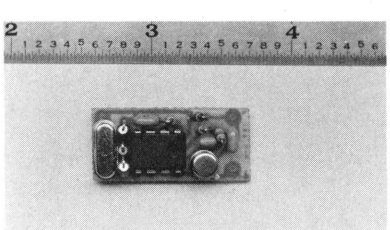
covered the background window appeared as a huge, white, bright spot. "You couldn't see any detail at all," said Bowen. "However, by using the contrast corrector we were able to correct the gray scale and bring the level down far enough so that not only were the actual window panes visible, a *tree* outside the window that no one had seen before, became apparent. At the same time," he emphasized, "we retained the correct color level on the faces of the talent in the foreground."

The "saved-from-a-re-shoot" project was an ABC promo spot featuring a man floating on a raft in a swimming pool. A girl, backlit by the sun, was completely invisible as she entered the shot. "We held the level on the man in the pool," said Bowen, "and, at the same time, by using the contrast corrector, we were able to bring in the correct gray scale on the girl so that she was right back in the spot. If the original negative is correctly exposed, we can bring up the face in the foreground, and punch the background up to an acceptable level," he stated.

Engineer Dick Caine added, "What we try to adjust for is the latitude of the film which is far more than the television system can handle. However, the contrast corrector squeezes the gray scale down so that it works perfectly for television."

Used in conjunction with the Dubner color corrector and Rank Cintel, Editel/LA's contrast corrector is another 'first' for the facility that has already chalked up many winners in the video post-production arena. △

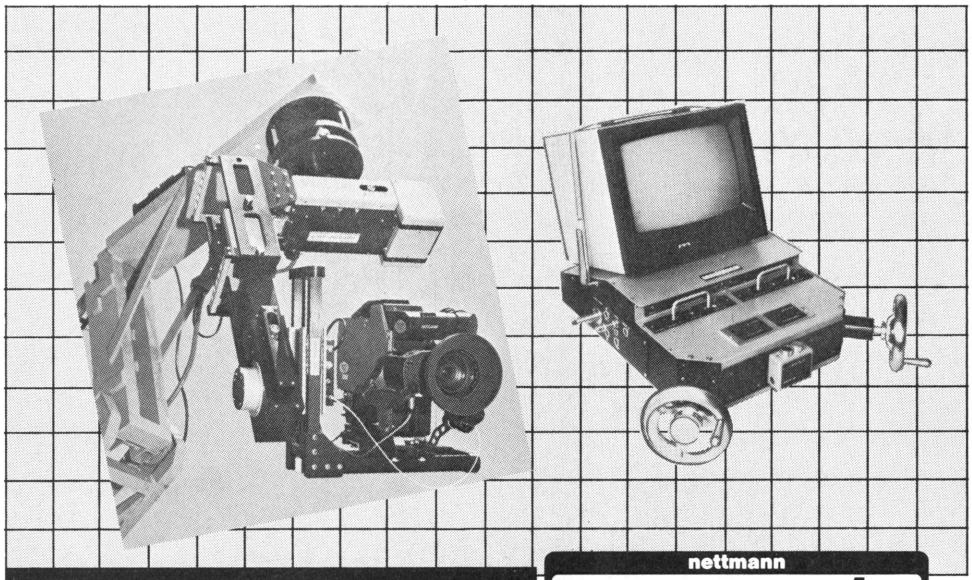
—Beverly Vandertrim



Mini Crystal

Tobin Cinema Systems announces the new TX-9 crystal board for double-system filming. Its reduced size of .5″ x 1.1″ (13 x 28mm) and height of .35″ (9mm) permits hiding it inside many recording Walkman-type cassette machines. The TX-9 will operate on 5

A pan and tilt head, for shots you couldn't make before. At Camera Mart.



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This production quality, remote controlled unit can just as easily be used on a crane, a dolly or from any fixed location. Its highly sophisticated electronics allow *360° movement in any direction.* No cables to wrap. And all lens and camera functions are controlled remotely from a console which offers several controlling options.

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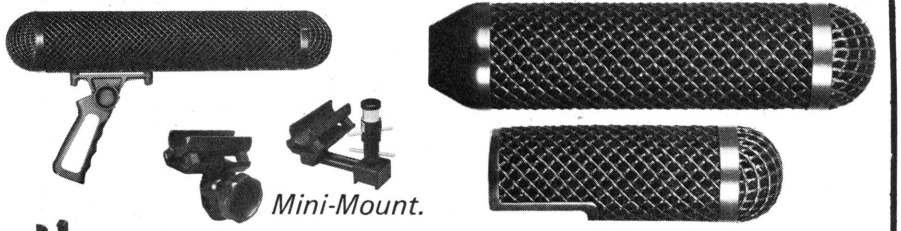

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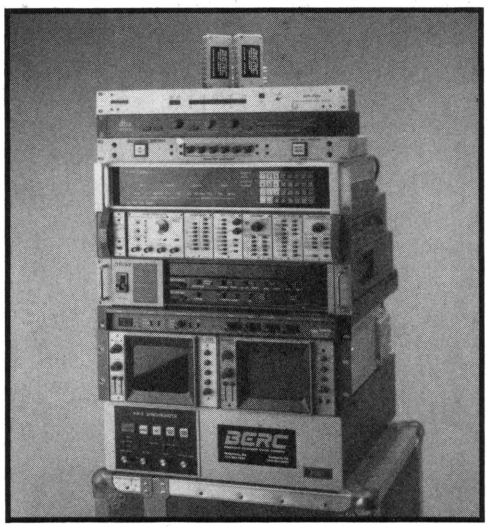

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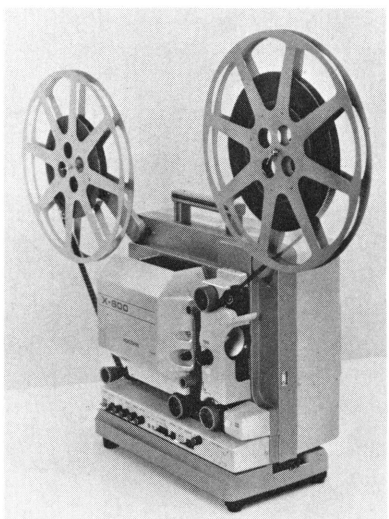
to 15 DC as found in most good-quality recorders with a DC-DC converter.

The output is a sine wave with low harmonics for minimal crosstalk to the audio track, and is designed to supply a line level high-Z input. The output can also be fed through a high resistance into microphone level input. It is available in 50 or 60 Hz.

The existing model TX-8 has been improved for greater stability and is now available in switchable 50 & 60 Hz, or single-frequency 50, 59.94 or 60 Hz output. It is offered for operation on -10, or +12 to +35 V dc.

Tobin Cinema Systems is located at 3227 49th Avenue SW., Seattle, WA 98116. (206) 932-7280.



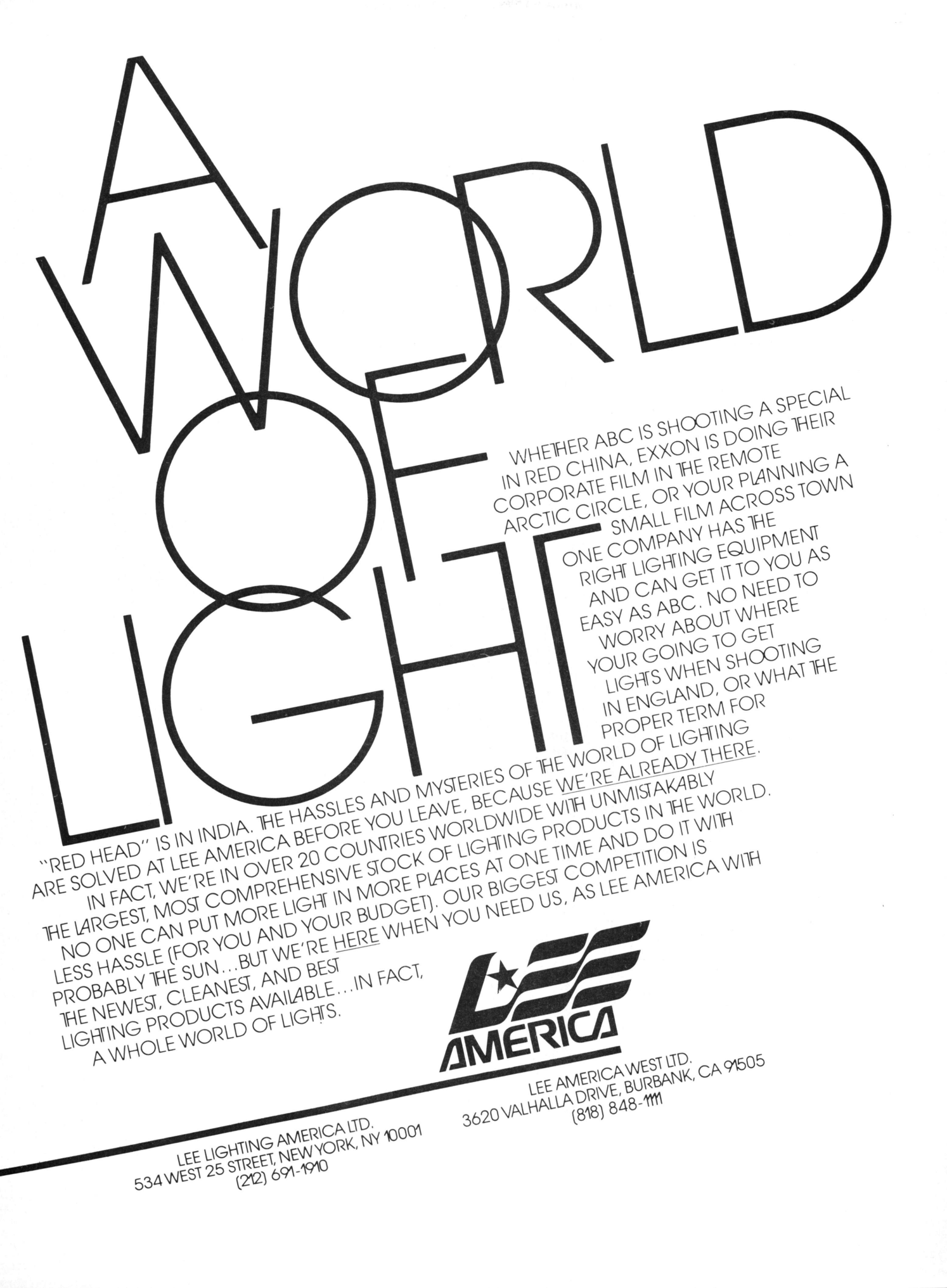
16mm Xenon Projector

Unique electronic features make the new Hokushin Model X-600 16mm Xenon projector so automatic, it is virtually like having a robot at the operator's command.

Introduced in the United States by Rangertone Research Inc., the X-600 offers optional wired or wireless remote control for every function – including opening the film gate, starting projection, and rapid rewinding without rethreading.

Even without remote control, these functions are highly automated through the use of soft-touch switches and micromotors designed into the X-600.

Ideal for theatrical, industrial, and educational purposes, the lightweight, compact X-600 offers optical and magnetic sound reproduction, a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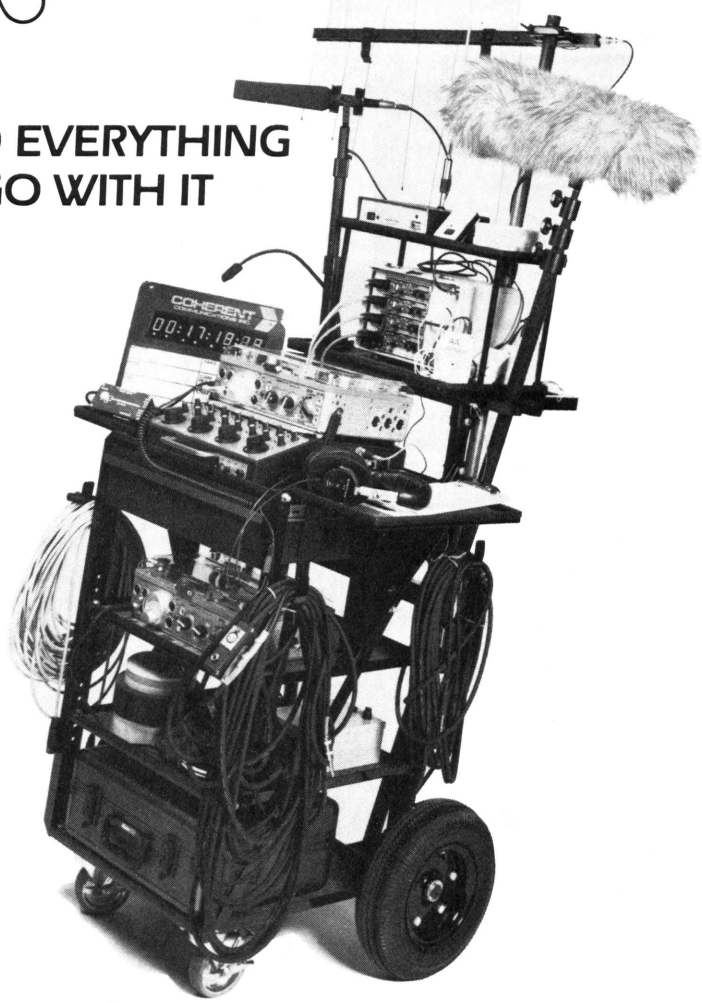

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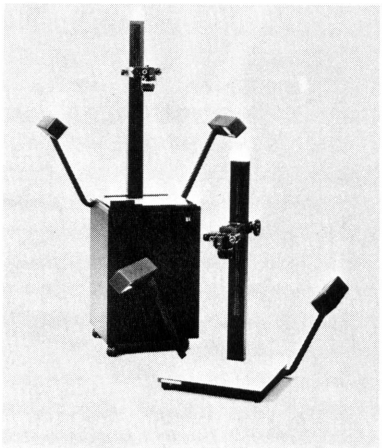
Besides wired or wireless remote control, a host of other useful options is offered from electronic autorepeat adapter to automatic changeover control, and a long-play (6,000-ft. capacity) reel unit.

For further information contact Rangertone Research Inc., 115 Roosevelt Avenue, Belleville, New Jersey 07109. Phone: 201-751-6833 in New Jersey, or toll free in other states, 1-800-221-1823.



Copystands for Lighting Systems

Iris International Inc., announces the availability of the Iris copystand and Trans-illuminated copystand. These stands have been designed specifically for the new slower instant film systems. They have quartz halogen illumination systems. The opaque copy and the sub-illumination systems use the same type of light source eliminating the need to change filtration. Units are compact, well designed to fit into any professional lab, office or communication center. These units are designed specifically for use with 35mm cameras, but are constructed to accommodate larger and heavier photo or video equipment. Units are constructed of heavy gauge metal. The system features the availability of an integrated coverglass and polarizing filters.

Contact Iris International, Inc., P.O. Box 515, Westfield, MA 01086, (413) 562-4172.

continued

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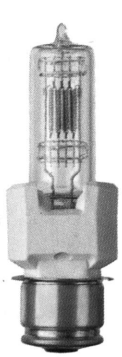
The new RoughNeck lamp is not only tougher on the outside, it's also tougher on the inside.

Its filament leads are connected to the base with silver solder so that the lamp is much more durable while operating under high temperatures.

And, thanks to new manufacturing techniques, the filament within each RoughNeck lamp is positioned more accurately than ever before.



This means maximum optical performance throughout the life of the lamp. Of course, it also means a tougher standard for other lamps to live up to.

For more information, contact your IED Independent Electrical Distributor or write or call GTE Products Corp., Sylvania Lighting Center, Danvers, MA 01923 (617) 777-1900 ext. 2650.

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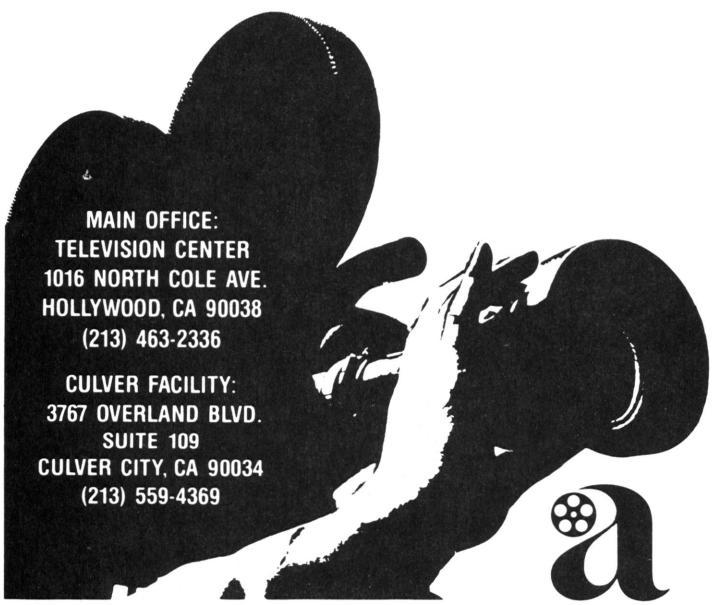

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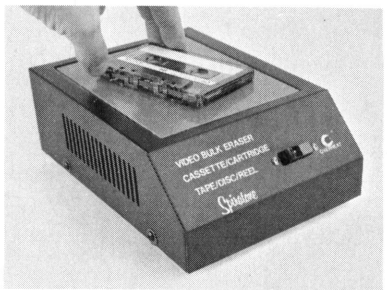
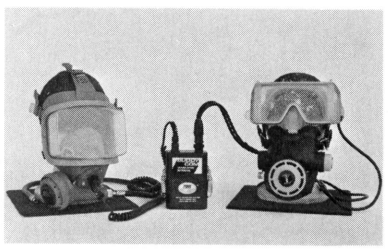


Bulk Tape Eraser

Designed for the serious videographer, audiophile and computer user, the Spiratone bulk eraser completely removes all traces of previously recorded material from video tape, video cassettes, audio tape, audio cassettes, computer tape and computer discs. It also makes possible the elimination of the disturbing rainbow of interference at the beginning of video tapes that occurs when rerecording over previously recorded material.

The Spiratone bulk eraser, which can also be used as a tool demagnetizer, measures 8⅝ x 3⅛", is AC operated, weighs 8 lbs. and has a thermal safety shut-off. For more information: Spiratone, Inc., 135–06 Northern Boulevard, Flushing, N.Y. 11354.



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Ocean Technology Systems introduces a through-water communication system to help direct and/or communicate diver-to-diver or diver-to-surface. This allows directors and cinematographers to verbally communicate underwater. For further information on this system or any of our many other systems contact: Ocean Technology Systems, 2610 Croddy Way, Unit H, Santa Ana, California, 92704, (714) 754-7848. △

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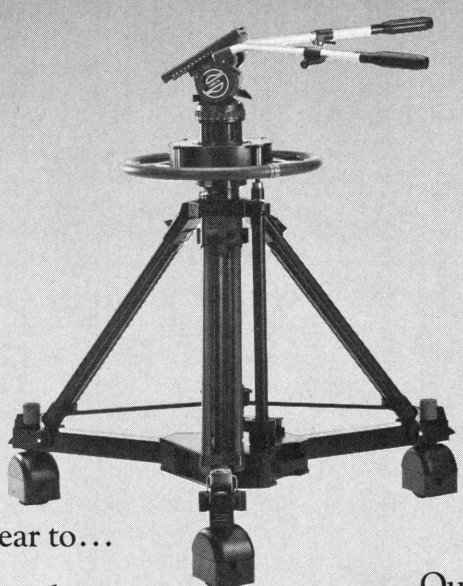

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The Bookshelf

by George L. George

Robin Wood's refreshingly unconventional survey, **Hollywood from Vietnam to Reagan** analyzes the transition in American films from the social protest of the 70s to the conservative trends of the 80s. Citing examples from films by Arthur Penn, Martin Scorsese, Brian De Palma and others, Wood outlines new perspectives on this Hollywood ideological shift and its consequences for American culture (*Columbia U. Press, NYC, $25*).

In a thorough study of a popular genre, **The World War II Combat Film,** Jeanine Basinger traces its evolution from quasi-documentary reports of real events to fictionalized versions of similar incidents. Her perceptive dissection of combat films reveals the composite nature of their style and the admixture of distinctly different themes (*Columbia U. Press, NYC, $30*).

Conversations with 15 top contemporary cinematographers – John Alonzo, Haskell Wexler, Bill Fraker among others – appear in the paperback edition of **Masters of Light** by Dennis Schaeffer and Larry Salvato. They illustrate the technical preferences, esthetic concepts, work methods and personal experiences of exceptionally creative professionals. In **Hollywood Cameramen,** a reprint of Charles Higham's 1970 study, the contribution to screen artistry of such earlier cinematographers as Arthur Miller, Lee Garmes and Karl Struss is effectively assessed (*U. of California Press, Berkeley, $12.95; Garland, NYC, $39*).

Don Allen's definitive study, **Finally Truffaut,** covers the late director's entire legacy. This film-by-film guide to Truffaut's 22 features illuminates the essential values of his work, their classical style reflecting the influence of Hollywood, in particular of Hitchcock, and the French lyrical tradition stemming from Renoir (*Beaufort, NYC, $12.95*).

A reprint of Andrew Sarris' 1968 classical reference work, **The American Cinema,** offers thoughtful assessments of 200 directors and their work. Sarris, a leading proponent of the "auteur" theory, writes with candor and authority, pinpointing knowlegeably these directors' stylistic strengths and weaknesses (*U. of Chicago Press, $9.95*).

John Kobal's priceless collection of photographs is liberally used in a fondly nostalgic volume, **Hollywood: The Years of Innocence.** Kevin Brownlow's preface and Kobal's informal comments bring back to life the genteel pre-1920 era that was soon to be shattered by the Fatty Arbuckle and other scandals (*Abbeville, NYC, $29.95*).

World War II aviation films, from prewar recruitment movies and wartime "flag wavers" to often sobering postwar perspectives, have been a staple Hollywood product. Bruce W. Orriss, in **When Hollywood Rule the Skies,** expertly evaluates 47 of these epics from *Test Pilot* (1938) to *Enola Gay* (1980). Included are cast-&-credits, synopses, press reviews and production data (*Limelight/Aero Associates, NYC, $18.95*).

The 36th edition of John Willis's pictorial and statistical record, **Screen World 1985,** compiles all films, foreign and domestic, released in the U.S. during the previous year. Thorough and detailed, its 10,000 entries and 1000 stills provide full data on films, personalities, and other relevant material (*Crown, NYC, $22.50*).

A professional handbook written in an engagingly lively style, **TV Commercial Film Editing** by Carmine R. De Sarlo fully encompasses the pre- and post-production of TV spots. It covers live action, animation, rotoscoping

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Glad you asked—the Mark III 4000W and 2500W have also gone to the gym, resulting in overall size reduction while maintaining existing photometrics.

The MARK III ballasts have also been reduced in size. They work great in either vertical or horizontal positions and their new retractable handles make them more conveniently transportable.

LTM's ''NEW & IMPROVED'' 1986 HMI lights are now built even tougher than before, and they continue to be the industry's most reliable.

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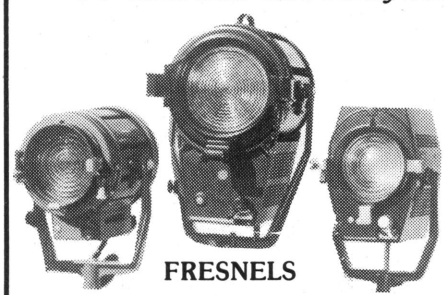
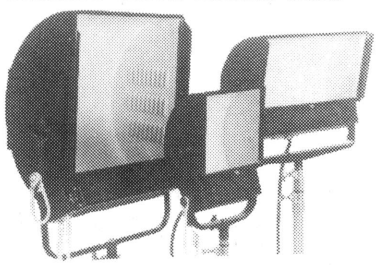
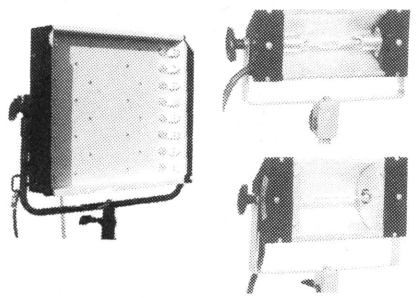


FRESNELS



SOFT LIGHTS



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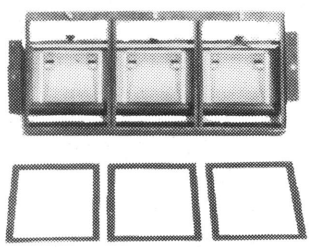

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In **Woody Allen,** Douglas Brode ascribes the mostly introspective mood of Allen's films to his early yearning for privacy. Their recurrent theme – an obsessive pursuit of perfect love tinged with the perception of ultimate failure – is sensitively discussed in this study of Allen's motivation and creativity (*Citadel, Secaucus, NJ, $19.95*).

New additions to the top-notch "Celebrations" series, **James Cagney** by Richard Schickel and **Frank Sinatra** by Derek Jewell, survey the lives and careers of two highly popular performers. Well-documented and superbly illustrated, these biographical studies offer insightful analyses of the characters they portray in films and the social impact of their screen personalities (*Little Brown, NYC, $19.95 ea.*).

Two recent biographies trace, in entertaining and sympathetic terms, the adventurous existence of David Niven. Sheridan Morley's **The Other Side of the Moon** offers psychological insights into Niven's mercurial personality, confirmed in interviews with his friends and associates. Charles Francisco's **David Niven: Endearing Rascal** is resolutely anecdotal and stresses the actor's upbeat moods (*Harper & Row, NYC, $18.95; St. Martin's, NYC, $4.95*).

Was Marilyn Monroe killed to protect John and Robert Kennedy from her use of telephone taps that recorded their intimacies with her? This is the sensational thesis of **The Marilyn Conspiracy** that Milo Speriglio propounds with frenzied energy and partisan assertiveness (*Pocket Books, NYC, $3.50*).

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Photos by Laurel Moore

Schemes and Dreams of *Ruthless People*

Produced by Joanna Lancaster and Richard Wagner
Directed by Jerry Zucker, Jim Abrahams and David Zucker
Jan DeBont, Director of Photography

by Samir Hachem

Ruthless People is a comedy that tries to make the loathsome lovable and the trashy digestible. It is a Disney picture (i.e., a release by Touchstone, which is the arm of Disney that has produced such "adult" fare as *Country*, *Splash*, and *Down and Out in Beverly Hills*), and it stars Bette Midler, Danny DeVito, Helen Slater and Judge Reinhold. The directors are Jerry and David Zucker and Jim Abrahams, the threesome that previously helmed *Airplane* and *Top Secret*.

This, they stress, is not a broad comedy, and certainly not a series of skits in the vein of their earlier work. *Ruthless People* has a linear narrative, consistent characters and a continuity of moods, all new elements for the directing team known as ZAZ. Never mind that they are dealing with characters the script describes as "egotistical," "spoiled," and "unfeeling," and with events that include kidnapping and sabotage and plans for murder, the challenge of *Ruthless People* was to bring together all these unlikely details in their necessarily bizarre surroundings and still manage to draw the

The Memphis look surrounds DeVito with harsh reds and yellows and wild patterns. **Below:** ***The camera and crane hover over dinner table of DeVito and Morris.***

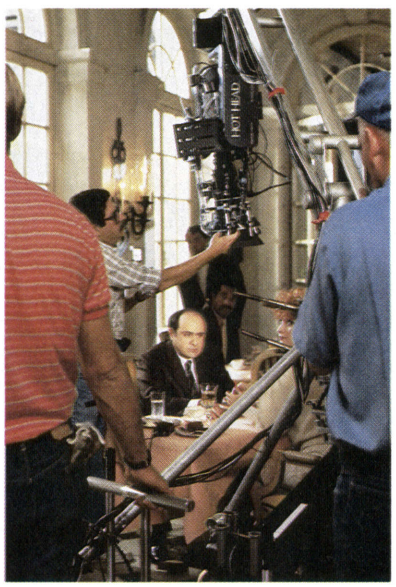
Opposite Page: ***DeVito, in his garish living room, weeps false tears as the police question him about his kidnapped wife.***

audience's sympathy and tickle its funny bone.

To this end, the combined efforts of cinematographer Jan DeBont and production designer Lilly Kilvert proved invaluable. Whether in her choice of locations, or in his tendency to use colored lights, the two were able to set not only the look of the film, but, far more significantly its tone and its spirit, its relationship to reality (and its indifference to it), as well as its fluctuating between what's straining on the eye and what's more comfortable, and back again.

In *Ruthless People* (an original script by Dale Launer) a man who is an opportunist and a louse plans to murder the very rich and very obnoxious woman whom he married for money. But fate interferes. One day, his wife gets kidnapped by a couple of vengeful amateurs whom he'd slighted. They confine her to their basement and demand ransom from her husband in exchange for her release. The twists are manifold. For one thing, the husband is actually overjoyed to have these two take his wife off his hands. For another, the wife behaves so irritatingly toward her captors that they have a good mind to set her free. The question that the film raises is not, "Who is more innocent and deserves the most reward?" but instead, "Who is less ruthless and deserves least punishment?" (Shades of O. Henry and "Ransom of Red Chief," perhaps?)

For Jan DeBont (pronounced Yan), cinematographer of (*Cujo, The Jewel of the Nile, I'm Dancing as Fast as I Can, All the Right Moves,* and *Clan of the Cave Bear*), *Ruthless People* represented a major change. "I've not done a comedy in a long time," he says, "and a film that takes place, for the most part, in a tiny California house, in three tiny rooms, was something I had no idea how to do. It's more important to feel how the characters feel than to see it because then it automatically flows into images, and that process adds to reality. The film is not shot



in a comedy style. Once you establish a scene, you have to stay with the actors, you have to stay with their faces, because it is a comedy, to see their interaction, otherwise you lose the element of enjoying it. But I never did single closeups. An audience always has a specific point of view, and you put your-

Cinematographer DeBont in red jacket. Jerry Zucker and Abrahams to the right of DeVito.
Below: ***Midler with kidnappers Reinhold and Slater in basement prison.***

self in the audience's point of view. They only want to see close-ups. But I put an object in the shot, or I place the camera angle higher, or I do it lower, to give you more, an interesting background, something of the interior of the house."

Eighty percent of the film's action takes place indoors. A majority of these scenes depict the kidnapped wife (Midler) in the basement of her kidnappers' house. This posed a difficult design problem for *Ruthless People*'s production designer, Lilly Kilvert. She, too, shuns the notion that a comedy must adhere to certain prescribed comedy film rules. "You know *exactly* how a comedy looks. You can see it with your eyes closed: It has a carpet; it has one of those lamps on the bedside table; it has nice wallpaper on the walls etc . . ." The problem, she maintains, with so many current movies that end up looking the same is the lowest common denominator syndrome. "Too many people making decisions, or too many people *not* making decisions. if you don't decide between pink and blue you get beige. Most people like beige."

Ruthless People will have no such problem. If anything, the Bette Midler character is supposed to live in a mansion that is so eccentric in its post-modernist tastes that it may border on bad taste. This does not worry Lilly Kilvert who insists that there is no such thing as bad taste. "People just have an exuberant way of expressing themselves, which is a lot better than having no taste at all," she says.

Kilvert (Whose work has set the realities of such diverse films as *Girlfriends, Rockers, Alambrista, The Loveless, The Sure Thing* and *To Live and Die in L.A.*) utilized furniture and art work inspired by the Memphis school of design, founded in Milan in 1980. It is made up by combining a mismatch of wild colors, shapes and angles, much of it startling to look at but utterly unfunctional. "The house we did for Bette we did right up to the edge, without having it snap, so it would have people laughing but not really uncomfortable." Instead of the "nice silk bedside lamps" featured in most comedies, Kilvert chose a couple of Nogushi lamps, simple square designs on reedy legs that transmit white light. "But you couldn't direct their light. You can't tilt the shade or turn it. You can only make it soft or strong. This was obviously hard on Jan. The whole Memphis house was a nightmare to shoot. I made a deal with Jan when we started, that I would give him a lot of lamps, but they would be real weird lamps. There was not one decent lamp that gave nice light in the whole picture, I don't think."

"I used a lot of colors," DeBont says. "I put a lot of practical bulbs, painted them any color, pink, blue, green, yellow, and hid them behind some things. Some-

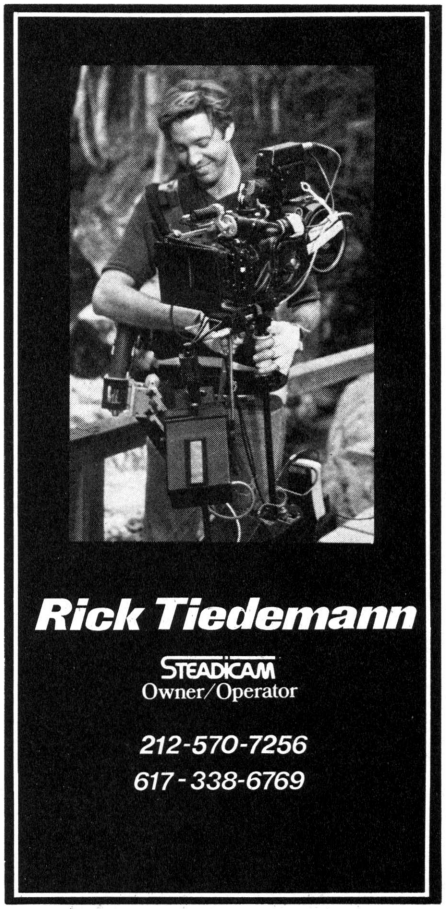
times, they're in the shot. It helps give the feeling that the people living in these houses are creative, and it gives me color shadows on the faces of the actors." This he calls "fantasy lighting." He says that it enhances the moods of the film and acts as a bridge between its scenes. "I used color in places that wouldn't have them but *could* have had them. When I did *The Fourth Man* I used a lot of color to express the emotion that was already heavy and dramatic. Every shot moved in that film, but the effect was not a Steadicam float. It was more eerie, like a human dolly move, like someone following you. You know something is going to happen in the image. There is no suspense in *Ruthless People.* There is a chase scene, but it's the slowest chase in the history of cinema. It's more like a procession. We found that suspense worked against the movie, that it was bad for the comedy. There is still movement in the image, there is tension transmitted from place to place, but it's more fun than mysterious." He cites the opening shot as an example. It is an overhead shot of two hands on a table at a restaurant—a hairy little hand, and a soft woman's hand with too many rings on it. They belong to Danny DeVito and his mistress (Anita Morris), who are planning to murder his wife. The camera does a 460 degree turn, while it is dollying back and booming down, all at the same time.

Only a few shots required the Steadicam, a tool which, says DeBont should only be used when absolutely necessary. "The style of the picture is never more important than its story," he emphasizes, "because it can be distracting and dangerous." He estimates that *Ruthless People* took up 11 weeks of shooting and about $12 million for a budget. (In contrast, *The Fourth Man* cost $500,000.) He used Arri BL cameras (as he had on *Clan of the Cave Bear, The Jewel of the Nile* and *Flesh and Blood*) mainly because he prefers the Cooke zoom lens (18.5-57) which, he says, is at least as sharp as any prime lens and very fast, over the Panavision lenses with which he says he's had a lot of "floating orbit" problems. The noise from the Arriflex was not a big hindrance. "Sometimes, we had to put an extra cover on the camera," he says. Eighty percent of the film was shot on Kodak 5294 stock, while some exteriors (set in downtown L.A. and on the Santa Monica Pier) recruited the 5247 stock.

"I used mostly the zoom lens," he says, "although I didn't zoom. But in tiny little rooms, you take out walls, but then you can't get a feeling for a house. If you put a camera outside a wall it's disorienting for an audience. They'll wonder, where is the camera? In the dresser? I kept the camera in the rooms and kept the ceiling on. I mostly used 27mm, 34mm, and 39mm."

Lilly Kilvert believes that an audience has the right to know where it is in relation to the action on the screen. Whenever available, she prefers a real location over a stage set. The little house of Bette Midler's kidnappers was described in the script as a Valley house (California's San Fernando Valley.) The script also called for a back alley and a garage that a car could drive into. "Forget it," said Kilvert after looking over a description of the two characters in question (Ken and Sandy, a stereo salesman and his wife). "Would these people live in the Valley?" she asked herself. "No." She relocated them and found the perfect small house on a street that had a few palm trees and was "almost sweet." The house had a garage but no back alley. "And that ended up being unnecessary. You didn't need to see people opening and closing doors," she says. A replica of the house was built on a soundstage at Disney. To accommodate camera movement Kilvert made it eight feet wider.

"You really want to feel the way these people live in the rooms. You want to feel trapped," she says about the Ken and Sandy house. In choosing the props that filled the house, Kilvert further ex-



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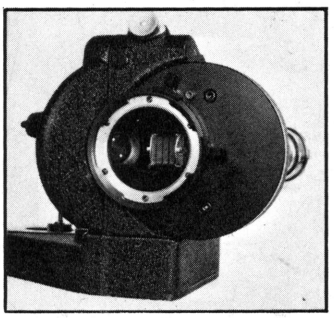

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ercised her storytelling skills by imagining for the couple an aunt who gave them an antique table, a benevolent mother who contributed some lamps, two and a half sets of silver, all mixed up now, after 11–12 years of marriage, and so on. "You want it to look as if it might have been there on a good day. The day before we started shooting I realized I'd made a mistake in the color I chose for the living room-dining room area. I'd chosen a teal green that changes during the day, because I liked it, but it was wrong for them. We had to change it. We painted the walls a gray mauve." The basement in which the Midler character is imprisoned for most of the movie (watching TV, doing aerobics) was initially overfilled with "junk they might have had." But then, "we took 90 percent of it out. We left a rug, a TV, the bed she's chained to. I wanted some things she couldn't reach because of being chained, but it turned out she could reach a lot more than she was supposed to. I think we could have taken even more out." A set, like a performance, she says, should not tire an audience. It should have clarity and be direct.

The Midler mansion featuring the Memphis designs was the other side of the coin. It is vast and epic, but, as the DeVito character complains, there is barely a place in it where one can sit. (A replica of an original chair design by L.A. artist Peter Shire was constructed so that a policeman in the film could sit on it and break it.) "I wanted that house to be a dangerous place for Danny (DeVito)," Kilvert says. "I wanted that house to hurt."

Jan DeBont felt that the charm and the fun of the Memphis school of design was in the quality of its clutter, which meant that he had to show everything in it at once, plus the people around it. This meant wide lenses, and an abundancy of low angle shots, with the camera propped up on a high-hat. You see a lot of ceilings in this film.

He admits that he was apprehensive at the beginning of shooting, having never had an experience that would prepare him for working with three directors. "I didn't know what to expect. I was afraid it would be chaos. Who's going to talk to the actors? Are they all going to talk to the actors?" A video-assist would be used. And, as it turned out, "Jerry (Zucker) works with the actors, near the camera, and the other two (Jim Abrahams, and David Zucker) would only watch the monitor. They would never be on the set. They concentrated on the comedy. They were ruthless about each scene, if the scene was funny or not. If it wasn't funny, it went. It was very democratic. If two liked it, then that was it, no ego problems. It went fine. We didn't record on videotape, though, because once you record it, then everyone wants to see, and your opinion changes after the first time you see something. You see new details that you didn't see before. The video camera and control unit, CEI, could handle a high amount of contrast ratio." He says he felt he filled an important role in bridging the continuity of scenes for the directing team accustomed to skits and lots of supporting characters walking in and out of shots in their previous films. "We had to take a lot of that rowdiness out because it's distracting from the joke in the foreground. The mood and the colors had to be consistent from scene to scene. There was no broad comedy."

Equal to his responsibility to the story, DeBont says, is his concern for how the players look. "People want to see the actors look good. It's my job to make them look good. We all have imperfections, and there's nothing that lighting can't correct. We used a special filtration on lights, and some on the lens for Bette. Some people need eye light. Anita (Morris) has a pale face and needs extremely soft lighting. But Helen Slater – I had to cool her down because she looked too pretty. She looked too much like a model.

"Bette is supposed to be overweight and unattractive in the beginning of the film. Through the course of the story, she does aerobics and gets thin. We had padding for her and special make-up in the beginning, but she still had to look good. We created extra shadows on her face. I had a special netting on the lens for Bette, and I had a backlight of ¾ CTO, (light orange gel) a side light of ½ CTO, and a fill light of a ¼ CTO, shooting with a 50 or an 85mm lens. I don't like to use a telephoto because it flattens the face. In wide shots, I always tried to keep some of the color light on her face, from the angle of the camera lens so it didn't flatten anything else. And I tried to keep the color consistent. Her face had a warm orange glow to it. We kept that effect from the other people. Even scenes that had two people together – Helen (Slater) and Judge (Reinhold) needed cooler lighting, you flag off some of the light. It's hard, because people move in a shot. It takes precise lighting. I use small units so I can hide them and put them on dimmers. I dim them during a shot. I prefer to operate myself, which I can do on my European films, but here I can't. If you operate the camera, you can respond directly to whatever the actors do spontaneously. You adjust. You see what the camera sees."

Lilly Kilvert sees her strength as a production designer in this same quality. "I see what the camera sees, not what the human eye sees," she explains. "The camera stretches things out, and flattens them. We walked into a lot of wonderful houses when we were scouting but what was wonderful about them the camera couldn't see. 'Let's get out of here,' I'd say. I design a set for the camera, for the lighting of the cameraman. This is the inner truth of a scene, of a story." △

Samir Hachem is a Los Angeles film writer with credits in several publications as well as American Cinematographer.

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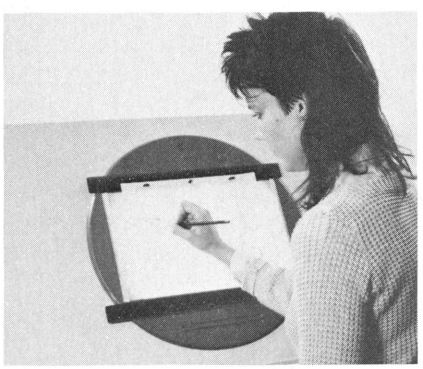

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Welles' Farewell, *The Other Side of the Wind*

by Kevin C. Brechner

One of Orson Welles' last films as a director was *The Other Side of the Wind.* In March and April of 1974 a portion of the film was shot at Southwestern Studio and in the town of Carefree in the Arizona desert forty miles north of Phoenix. I had the opportunity of spending three days on the sets. The last two days I brought an old Leica IIIf and was allowed to shoot anything from the sides and the lighting catwalks above, as an observer-participant only. What information I gained came from talks with the cast and crew; it must be considered hearsay information and taken with a large grain of salt. However, the overall *mise-en-scene* does give an indication of the way Orson Welles was working at that point in his career.

The Other Side of the Wind has not been released. Excerpts of the film were shown on the telecast of the 1975 American Film Institute's tribute to Orson Welles (*American Cinematographer,* April, 1975). It revealed some magnificent photography and editing. The cast list of the film is rather impressive in itself. Included among the players are John Huston, Oja Kodar, Peter Bogdanovich, Edmond O'Brien, Lilli Palmer, Norman Foster, Mercedes McCambridge, Dennis Hopper, Paul Stewart, Susan Strasberg, Claude Chabrol, Stephanne Audran, Robert Random, Paul Mazursky, Henry Jaglom, George Jessel, Cameron Mitchell, Benny Rubin, Pat McMahon, Frank Marshall, Curtis Harrington, Dan Tobin, Larry Jackson, and Stafford Repp. Many others play small roles and bits or serve as extras.

Most of out knowledge of the film comes from accounts written during or after the filming. A recent interview with the filmmaker Henry Jaglom described *The Other Side of the Wind* as "A brilliant film he (Welles) made about Hollywood that's been locked in a vault in Paris because of a complicated legal suit." Joseph McBride's book *Orson Welles* (Viking Press, New York, 1972) gives a description and photographs of the early stages of filming. A newspaper account by Joyce Haber in the *Arizona Republic* (March 21, 1974) describes the role of Peter Bogdanovich. Three recent books on Orson Welles by James Naremore (Oxford University Press, 1978), Barbara Leaming (Viking Press, New York, 1985), and Charles Higham (St. Martin's Press, New York, 1985) discuss *The Other Side of the Wind* at length. John Huston described his involvement in his autobiography, *An Open Book* (Alfred A. Knopf, New York, 1980).

My involvement in *The Other Side of the Wind* resulted from a phone call made to the secretary at Southwestern Studio. The studio was all but shut down due to a lack of business. Only a skeleton crew remained consisting of the studio management, Tom Brodek and Mark Lambert, a secretary, the operations manager, and a couple of guards. Southwestern Studio had three large soundstages, production offices; facilities for makeup, dressing and editing; a tour department, and a 125 acre back lot with Western street. Although the studio was well outfitted, it had seen better days as the network television home of *The New Dick Van Dyke Show* which ran for three seasons on CBS. The studio also housed production offices for Hugh Downs and had been used for several network pilots. The studio or back lot had been used for part or all of several feature films, including *Zabriskie Point* (1969), *Cancel My Reservation* (1972), *Pocket Money* (1972), *Man and Boy* (1972), and the short feature *Time River* (1973). But by 1974 lack of work had caused the tour department and all but the most vital functions to be closed down. After that I periodically phoned the office to keep in touch. It was one such call that got me involved in *The Other Side of the Wind.*

When asked what was going on at the studio, the secretary said, "Oh, not much. . . . It's pretty quiet here. . . . Oh, . . . Orson Welles is back on Stage One working on a film . . . they're having trouble finding extras . . . maybe you could help." Trying to remain calm, I forced out a reserved, "Well, . . . maybe I could find some time." A Phoenix newspaper earlier had run Joyce Haber's article announcing that Welles was filming at an undisclosed location in the Phoenix area. The city was abuzz with rumors about where that might be. The secretary gave me the phone number of Rick Waltzer, a production assistant on the film. When I spoke with him he said that they did indeed need extras because of the studio's remote location. I arranged to gather together some friends, mostly film enthusiasts and graduate psychology students, to travel the 40 miles north into the desert the next evening to be "extras in an Orson Welles movie." Incidently, some of the extras those nights have gone on to prominence in other fields, such as psychologists Dr. Avril Thorne of Wellsley College and Dr. June Flora of Stanford, and social economist John Cook of the University of North Carolina.

I drove up to Carefree a little earlier than the eight o'clock call to find the sound stage set up, but empty of people except one technician. It was not until about nine o'clock that the cast and crew began to come in. Bit-by-bit from questions directed to the crew I gained a mosaic of what the film was about and it

Opposite: ***On stage at Southwestern Studio, Welles discusses an upcoming scene with the crew. Oja Kodar looks on.***

Unidentified actress, John Huston, and veteran actor Dan Tobin between scenes.

seemed every bit as incredible in concept as *Citizen Kane.*

The Other Side of the Wind tells the story of an aging film director, Jake Hannaford, played by John Huston, who is having trouble finding financing for his current film. The principal action takes place at a birthday party for Hannaford attended by various Hollywood types: actors, actresses, directors, critics—those on the way up and those on the way down, a few going nowhere. A group of young filmmakers are following Hannaford wherever he goes, documenting his life.

The scene being shot that evening was being made on the abandoned main set built for *The New Dick Van Dyke Show.* Originally the set had represented the kitchen and living room of a desert house. Adobe brick columns surrounded windows looking out to a painted desert backdrop. A small alcove contained a bar and was adjoined by an unusual fireplace shaped like a rounded cone. It looked a little like the bread ovens built by Pueblo Indians.

Welles' set however looked entirely different than *The New Dick Van Dyke Show.* The lighting of director of photography Gary Graver did not resemble the bright situation comedy lighting designed by Richard H. Kline, ASC for the Van Dyke show. It was dark and moody, with pools of light around tables and chairs. Kline had used scores of 10Ks and 5Ks to illuminate and completely wash the large set in soft modeled light. Welles and Gary Graver took what was left of that set and changed the visual look entirely. Most of the lighting was done with 1, 2, and 5Ks. Often only five to ten instruments would be used in a large scene. In some of the later scenes shot in the house in Carefree, only one or two 1Ks would be used to light a scene with two people. While this economy in the use of lighting instruments was in part due to the low budget, it also led to very dramatic lighting where the principals would be haloed in light and the shadows would go to black. This probably helped them match this set to previous sets they had filmed, and it also was reminiscent of the lighting in *Citizen Kane.*

It is impossible to describe accurately the sensation when Orson Welles arrived on the set. The three nights I was in attendance, the "day's" filming began at about 10 pm and ended the next day at about 6 am. Usually the small crew of about ten people arrived first. The crew consisted of the director of photography, one camera operator, two production assistants, a gaffer, and grips. Then the extras and cast filtered in. Messrs. Huston and Welles arrived about the same time. Actually, Welles' voice arrived first. Most everyone is familiar with his deep, commanding voice. But, when he came through one of the doors of the large sound stage and spoke to someone as he entered, it was as though a huge electrical switch had been thrown that suddenly energized the whole building. *Everyone* became alert, even the veterans. Most seemed to sense that they were participating in an extraordinary experience. The atmosphere was electric.

Most of the time, perhaps because of his great bulk, which must have been pushing 300 pounds, he chose to sit while directing. From a chair on the side of the set he would give directions to Gary Graver and camera operator Bill Weaver. Sometimes Welles would operate one of the two cameras. One crew member mentioned that if the director of photography thought a different camera angle was needed he would secretly move Orson's chair to the new angle when Orson took a break.

Production assistants Rick Waltzer and Neil Canton simultaneously filled the roles of assistant directors, associate producers, clapper-loaders, gofers, and continuity. Rick Waltzer also acted in the picture. Neil Canton has gone on to co-produce the smash hit *Back to the Future* and at the time of this writing is working on *Witches* at Warner Brothers. Welles would speak quietly to the actors, often individually. Several of the scenes involved interactions of John Huston with Bogdanovich, Norman Foster, veteran actors Dan Tobin and Stafford Repp, and a young blonde actress, Cathy Lucas. When Welles did choose to stand up to make a point, or direct a camera movement, the point was emphasized by the sheer presence of his bulk and his commanding voice. It seemed curious how different the aging Welles looked from the way he had projected the aging Charles Foster Kane.

We were told that only one copy of the script existed and Mr. Welles had it. Later we saw it as a typewritten script held in a black leather binder. The script had been written by Welles with assistance from Oja Kodar. Unfortunately, being an extra did not grant one the privilege of strolling over and thumbing through the script.

What seemed incredible about *The Other Side of the Wind* was that the fine line that exists between the reality of the "real world" and the unreality of the "reel world" disappeared. The aging film director was played by aging film director Huston. The rising young film director was played by rising young film di-

rector Bogdanovich. The older pitchman was played by older director Foster, who surely must have made many pitches in his day, including when he directed Welles in *Journey Into Fear* (1942). The beautiful young actress in Hannaford's film was played by a beautiful young actress Oja Kodar (co-author of the script). A Hollywood critic was played by the actress Susan Strasberg who looked lovely and who surely must have grown up a critic by living in the household of her father, Lee Strasberg. We were told that Dennis Hopper and Paul Mazursky had been filmed earlier portraying themselves. The pattern followed all the way down to the extras. The group of cinema enthusiasts and onlookers wandering around the party scene were all played by cinema enthusiasts. None of them were getting paid. Perhaps the story line did not follow the actors' real lives; nevertheless, the ensemble could only be regarded as an extreme example of typecasting.

The documentary filmmakers, led by Larry Jackson, were recording the party with still cameras and an empty Eclair Camaflex camera, which Welles owned. The actual film was running through two handheld 16mm Eclair NPR's, also owned by Welles. Other scenes had been shot with an Arri 2C, Super 8, and still cameras. As the real cameras flowed through the party scenes, they occasionally caught sight of the other cameras real and unreal. It didn't seem to matter because the story and the filming of the story at that point became the same thing. (Larry Jackson has gone on to become the vice president of international acquisitions for Samuel Goldwyn Productions.)

Many times it was difficult to distinguish a difference between the actions and dialogue of the participants when the cameras were rolling and when they were not rolling. The dialogue between the actual takes was every bit as interesting as that of the film. Imagine Welles, Huston, and Bogdanovich, three giants of filmmaking, in the same room, trading off barbs and comments. It is unfortunate that these conversations were not recorded, because most of the comments have faded from memory. I do remember John Huston sliding up to Graver while the latter was directing the placement of a lighting instrument, and saying, "Well, Mr. Toland, do you think that was the right choice?" In sort of a backhanded compliment, John Huston placed Gary Graver in the same class as Gregg Toland, ASC, the legendary cinematographer of the likes of *Tugboat Annie* (1933), *Les Misérables* (1935), *The Goldwyn Follies* (1938), *Wuthering Heights* (1939), *The Grapes of Wrath* (1940), *The Westerner* (1940), and *The Best Years of Our Lives* (1946). In 1941, Toland teamed with Welles in what is generally considered one of the greatest of films, *Citizen Kane*. Graver, who appeared to be in his late twenties, just smiled.

Graver also filmed *F for Fake* (1976) and an educational film on *Othello* for Orson Welles. After *The Other Side of the Wind*, he went on to photograph *The Attic* (1980) for director George Edwards with Ray Milland and Carrie Snodgrass. He wrote and directed *Texas Lightning* (1980) and *Trick or Treat* (1982). He has recently completed *Love Leads the Way* (1986) for Disney and the remake of *Stagecoach* (1986).

A conference at the end of the night's filming: Peter Bogdanovich, Huston and Welles.

During the filming of the party scenes, for what reason I know not, Welles selected Jack Boyce, who I had brought as an extra, and me to deliver single lines of dialogue. Whether we made it past the cutting room floor is not as important as the experience itself. Boyce was so affected by the experience that his first child, a boy born a few months later, received the middle name Welles.

The line I delivered was, "Fascist, shall we define our terms?" I had absolutely no idea what it meant or how it fit into the story line. I asked Welles some lame question like, "What is my motivation?" He pointed to Bogdanovich and said, "He'll tell you ... Peter, help him with his line." Bogdanovich, who had just finished *Paper Moon* (1973) and *Daisy Miller* (1974) following the success of *Last Picture Show* (1971), and was beginning *At Long Last Love* (1975), took me over to the script. I saw that my line was typed under the heading of a character called "Cineaste." Later I looked it up in a dictionary and found out the word *cineaste* means cinema enthusiast. I, too, had been type cast in my small role. I read the line from the script a few times. Bogdanovich said, "That's fine." Welles came over and said to Bogdanovich, "Do you think he can say the line?" The shot went very fast. I delivered the line while totally confused about what it meant. Bogdanovich crossed in front of me and delivered some response which I cannot remember. My enthusiasm was tempered later when I read in Joseph McBride's 1972 book *Orson Welles* how honored he felt to have been picked to deliver a line in *The Other Side of the Wind*. His event

Director of photography Gary Graver listens as Welles describes a scene.

occurred in 1970. Mine was in 1974. This will give some indication of how long the film was in production. Who knows how many people during those years were pulled to deliver one liners?

Financing for this film seemed to fit perfectly into the image of Welles as a maverick who could not get funding through the Hollywood studios. The crew members, who were all very young, mostly in their twenties, said that the financing was "coming from France." One said that none of the crew had received their salary for several weeks. There was of course no pay or screen credit mentioned for any of the extras. The second night I was at the studio, at about 3 a.m., a young woman dressed in a flowing black cape arrived on the soundstage with a gush of French words, "Oh, Orson, mon ami. . . !" Welles disappeared with her for a few moments. I was told by one of the crew members that the payroll had just arrived in cash from France. Information in Barbara Leaming's book on Orson Welles leads me to believe that the caped woman was Dominique Antoine, who arrived *without* the cash. That same night Oja Kodar spent the evening on the set, although she did not appear in any of the scenes. Besides being a co-author on the script, Leaming describes Ms. Kodar as a co-financer of the film.

The third evening I was in attendance was not at Southwestern Studio, but in a private mansion in the nearby town of Carefree. The large house was perched on a desert hillside and built into the huge round stone boulders. In order to preserve secrecy, one of the crew members had posed as a vacationer renting the house for an extended holiday. Welles was said to be staying in the house during the Arizona portion of the filming. Again, not having a copy of the script, we had no idea of how the scenes fit into the story. The size of the rooms made the event much more intimate than on the sound stage. The original group of extras dropped in size due to conflicting commitments or lack of interest. The hard-cores made the long trek out from Phoenix.

Most of the shots that evening were dialogue beween John Huston and Cathy Lucas. Huston's gravelly voice, free spirit, and lumbering, slightly-bent-forward walk charmed everyone.

It was a pleasure to see him take direction from Welles. Welles had him retake one difficult scene in particular several times. After the third take, Welles said softly, almost with tears in his eyes, "That couldn't be done any better!", to which Mr. Huston replied, "Perhaps." Huston provides a long description of his participation in *The Other Side of the Wind* in his autobiography *An Open Book*. He mentions that Orson caught him studying his lines for his party scenes, and said, "John, you're just causing yourself unnecessary agony. Just read the lines or forget them and say what you please. The idea is all that matters." Huston also related a humorous incident that occurred during the filming of an exterior scene that required Jake Hannaford to drive recklessly. Huston, who does not generally drive, unintentionally gave them more than they asked for. With the car jammed with Welles, the crew and a rolling camera, Huston managed to steer the automobile the wrong way on a freeway into oncoming traffic. Then he jumped the curb, crossed the median, and eventually got the car aimed in the right direction. The passengers reacted with a stony silence followed by a heavy sigh. Orson said, "Thanks, John, that'll do."

After the third night our services as extras were no longer needed, and *The Other Side of the Wind* became a great memory for many of us.

A recent interview with Henry Jaglom stated that *The Other Side of the Wind* is tied up in a Paris vault. David A. Cook in *A History of Narrative Film* (Norton, New York, 1981) reported from another source that as of 1979 the film was 96 percent completed. Barbara Leaming's book *Orson Welles* describes at length the complications associated with the film that have involved financing from a relative of the former Shah of Iran and the disputes that resulted when the Ayatollah took over. According to Gary Graver at a recent meeting, the film is completely shot, except for a few pick ups. It is partially edited. Oja Kodar now has control of the property. Gary Graver said that he and Ms. Kodar currently are working to complete the film.

Whether we shall ever get to see this last major work of one of the world's greatest filmmakers is uncertain. Perhaps the film forever will remain unfinished or unreleased, like Eisenstein's *Que Viva Mexico* (1930–32) or Josef von Sternberg's *I Claudius* (1937). The excerpts of *The Other Side of the Wind* that have been shown publicly so far show magnificent photography, fine acting, and a truly unique concept. We can only hope that Graver and Kodar can complete the project. Bogdanovich, quoted in Joyce Haber's news article says, "I think this is Orson's most exciting film since *Citizen Kane*". △

(Kevin Brechner is a producer for Time River Productions of Pasadena, California.)

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Tender Loving Care for *Moonlighting*

by Bob Fisher

It was just a quick take of Cybill Shepherd exchanging some snappy dialogue with Bruce Willis; just a few seconds out of 60 minutes.

But, director of photography Gerald Finnerman, ASC, sees something no one else does – a tiny spot of light on Shepherd's nose. If you blink, you miss it. Maybe it will be imperceptible on the video screen. Perhaps no one else will care. However, Finnerman does. He calls the problem to the director's attention, adjusts the light, and shoots the scene again.

That's *Moonlighting*, 80 to 90 pages of script (50 is more typical for an hour-long film) which requires nine long days to shoot plus large doses of tender loving care.

There is nothing else quite like it. There's great dialogue, and if you think that's something that doesn't concern a director of photography, try shooting some of those fast-paced scenes with dual mikes and overlapping lines.

There's Shepherd and Willis, a "1980s version" of Bogart and Hepburn. Try lighting Shepherd, who never stands still or looks in the same direction twice; then factor in Willis for a two-shot. It takes more than a little thinking, and a great deal of attention to detail.

Try shooting all of the script pages, with maybe 35% of production done at practical locations, day and night, interiors and exteriors, where no two settings are ever the same. Try a theater that seems as big as the Los Angeles Coliseum, and as difficult to light; or, a posh restaurant; or, a dark parking garage; or, a seedy bar.

In an industry where imitation is the sincerest form of flattery, there are no *Moonlighting* clones. This isn't going to be an easy act to follow.

Finnerman recalls that it started with a call from Jay Daniel. "I had worked with Jay when I was at Columbia between 1975 and 1980. He was a producer for *Police Story* and a number of other programs. Jay said they (ABC Circle Films) had an idea for a dramatic comedy – something like *The Thin Man*."

The story: Shepherd plays the part of a successful model whose business agent takes off with most of her money. Willis fast-talks her into keeping a bogus detective agency that was part of the scam. The producers wanted a very high class look. They wanted Shepherd to look not just good, but fantastic. And Willis, for the concept to work, must provide balance for Shepherd's brilliant glamour with his unpolished demeanor.

Daniel and producer-writer Glenn Caron laid out the parameters for shooting *Moonlighting* in their first meeting with Finnerman. Most of all, they told him to be daring. That's like telling a thoroughbred race horse to feel free to run.

Finnerman grew up in Los Angeles. His father, Perry Finnerman, Sr., was an operator for Bob Surtees, ASC and Harry Stradling, Sr., ASC, and later became a contract cameraman at Warner Bros. Finnerman earned his degree at Loyola University, and did graduate work in secondary education with a minor in abnormal psychology at UCLA. During vacations he worked in the loading room at Warner Bros.

"All I ever wanted to do was become a cameraman," he says.

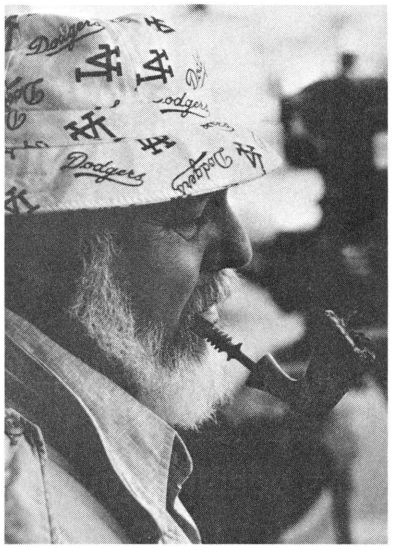
Finnerman started as an assistant on his father's crew. When his father died during the mid-1950s, Harry Stradling, Sr. took Finnerman under his wing. He worked as an assistant and later as an operator for Stradling, Sr., who recommended him for his first job as a director of photography when the *Star Trek* TV series started in 1966.

Finnerman won his first Emmy nomination for visual effects photography on that show and his second, in 1973, for *Kojak* which was produced by Universal Studios. There were three more nominations during his Columbia and Universal years, including *The Gangster Chronicles* (Universal, 1980–81), *From Here to Eternity* (Columbia, 1979–80) and *Ziegfeld* (Columbia, 1977–78); the latter yielded an Emmy for best achievement for long form show in cinematography.

One of the most important rules for shooting *Moonlighting* is that zoom lenses are never used. The show is shot entirely with prime lenses. The camera is almost always moving, tying the people together. That dictates the use of lots of dolly track and crosslighting.

"You can't dolly around a room with a 10K in the back of a

Facing page: *No, it isn't Ingrid and Bogie in 1945, but Cybill Shepherd and Bruce Willis in a 1986* Moonlighting *episode, "The Dream Sequence Always Rings Twice," which Gerald Finnerman photographed in true* noir *style.*



Above: Moonlighting ***takes its crew to such unusual locations as this art deco clock tower above downtown Los Angeles.*** **Right:** ***Finnerman on location.*** **Opposite:** ***Sophisticated equipment such as remotely operated camera systems are utilized often.***

camera," Finnerman says. "We'll go from a master to a two-shot, and then look over someone's shoulder, and we are into a close-up for a reaction shot. And, it all has to blend with the master."

For two-shots, he borrowed an idea from the past – split diffusion. Maybe he'll have a Mitchell C filter in the half of the matte box, and clear glass in the other half; or a Mitchell A or B, or various other combinations. This allows him to soften Shepherd's half of a two shot in very subtle contrast to Willis depending upon the scene and setting.

For his tools, Finnerman selected Arri BL 3 cameras with Zeiss prime lenses, Eastman color high-speed negative film 5294 for interiors and night exteriors, and Eastman color negative film 5247 for daylight.

"I've used Zeiss lenses for years," Finnerman says. "There's nothing sharper, or crisper, and if you want vivid images, what's more important than that?"

All camera gear is rented from Ultravision. "They do an excellent job of servicing and maintaining their equipment," says Finnerman. "That's the key. Any camera is going to have problems if you don't maintain it. We're shooting 12 to 14 hours a day. Once we shot for 20 straight days. And we haven't had a single down time problem from our Arri BL3's."

Finnerman also tested all of the available low-light sensitive films before settling on the Eastman 5294 film. "It has the latitude that I need for this show," he says. "It holds up well at low-light levels; the blacks stay black, the tones are rich, the faces don't go muddy, and the shadows don't go green."

The photography is highly stylized. Finnerman lays out every master shot like a complex ballet. He has dolly track and three-quarter-inch thick plywood boards painted to match every carpet color on standing sets at 20th Century-Fox. One stage has sets for Shepherd's home. Another stage houses the office complex for the Moonlighting Detective Agency.

Finnerman uses diverse lighting packages – "They (the producers) haven't denied me anything," he says – mainly inkies for interiors and HMIs for daylight. Many locations are shot with practical light and small boosters for modeling and balance.

He generally avoids overhead light – "That flattens the image," he explains.

But, in one of the office sets, where the ceiling is only eight feet high, Finnerman uses ambient light overhead. Otherwise, most of his light comes from units on the floor.

His stages are generally lit so he can work at stop T/4 or 4.5 which he feels yields the best resolution with the Zeiss prime lenses. But of course, this also depends upon the location and the particular illusion.

"You have to be flexible," Finnerman says. "We have very little time for preparation. Usually, I send an electrician with a Kelvin meter to locations ahead of us so we'll know how to approach lighting. That tells us what we need – do we have to mix with fluorescents? Do we need inkies, or HMIs or color correction filters?"

There was one location at a hotel near Los Angeles International Airport. The lobby was surrounded by windows, and it was a very overcast day. Finnerman tinted the windows with neutral density material, used a coral filter to warm up the image a bit, and worked at stop T/1.8.

"It was a warm, lovely look, which was what that scene required," he says.

Finnerman uses four basic exposures with the 5294 film. Most scenes are photographed in tungsten 3200K light at the 400 exposure index recommended by Kodak. For night interiors, he'll go down a half-a-stop and rate the film for an EI of 650. For low-key, moody scenes, he goes down a full-stop to EI 800.

"We still get very rich blacks (at EI 650)," he says.

Finally, in moonlight, Finnerman rates the film at EI 1200, and still the blacks don't go milky. "It's a very subtle film," he says. "And DeLuxe Labs does wonderful work with it."

One of the keys is the way Finnerman lights Shepherd.

"Every frame of Cybill is lit like an individual portrait," he says. This is done with the aid of a 10 dimmer console which allows Finnerman to subtly vary the angles of light on Shepherd as she paces through the office complex or her home.

"The stage sequences are lit almost like a three-camera film show," he explains. "There are two people on the dimmer console. Anyplace she stops, we put the right key on her and bring down the level in the area she just left." It's very smooth.

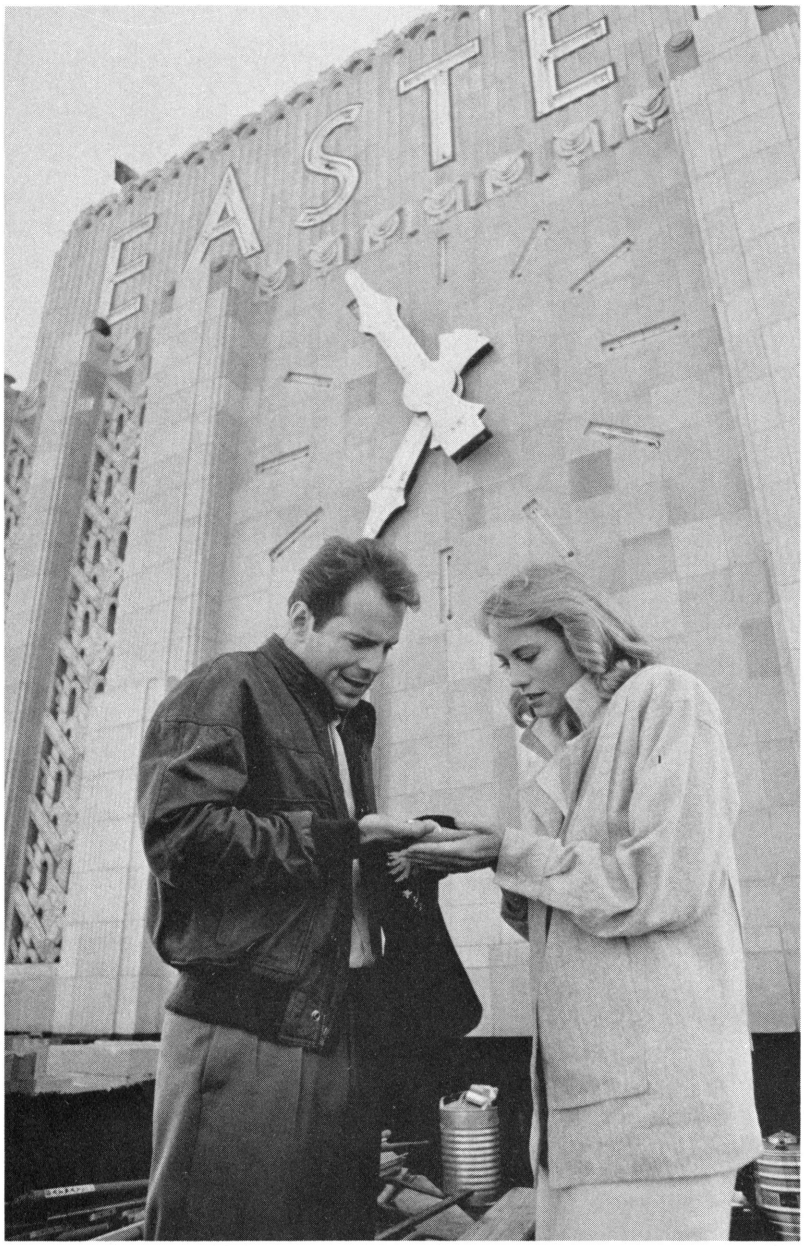
"Her best lighting is up high . . . butterfly lighting, from the Harry Stradling, Sr., school of photography . . . or Bob Surtees . . . or Burnie Guffey. All three of them mastered the art of putting a beautiful actress in her best light by masking tiny wrinkles and laugh lines."

Also, there is always an obie on the camera to put some sparkle in the performer's eyes. That you expect. But, Finnerman adds some nice twists when it comes to lighting Shepherd.

"Most blonde hair goes white when you backlight," he explains.

Not Shepherd's. She comes through as a rich honey blonde, and that's no accident.

Finnerman uses straw #54 color gels on the lights for daylight scenes, and adds a half MT filter to warm her hair up a bit for night scenes. Add backlighting to that mix, and the results are spectacular. It's almost like a commercial;



Willis and Shepherd find a clue on the clock tower.

only Finnerman does it while he is shooting nine pages of some very complex photography a day.

"One trick I learned from Harry (Stradling, Sr.) is that in situations like this you fill-light the woman and crosslight the man," he says.

Finnerman has special brackets on the matte box that allow him to use ring diffusion and sliding diffusion – which most directors of photography haven't used for 20 or 30 years. "It's the kind of thing that people like Stradling, Sr., Surtees, Guffey and my own father used to do so well with actresses like Bette Davis and Joan Crawford," says Finnerman. "Sliding diffusion disappeared with the zoom lens. Our use of prime lenses lets us use enhancements like this."

Finnerman even employs a special netting that Stradling, Sr., used to diffuse the light on Audrey Hepburn when he shot *My Fair Lady*. "I was Stradlng, Sr's., operator when we won the Oscar for *My Fair Lady*, and I've saved that netting for all of these years," he says.

The production schedule can be best described as hectic and vigorous. Finnerman figures that each page accounts for some 30 seconds of air-time, twice normal because of the fast pacing and rapid dialogue. "There is a lot of double miking and overlapping dialogue," he adds. "I believe the words and pictures complement each other."

Because of the nature of the show, the producers always want to be able to see faces and expressions, and reactions to dialogue.

Much use is made of multiple cameras to cover action from various perspectives. This makes lighting even more complex. There are many car shots, and Finnerman typically shoots these with three Arri cameras. Two of the cameras are on one shots for individual reactions. A third is a cross camera set for a deep focus on a two-shot.

The front cameras are set on the hood at stop T/4 and they are loaded with the medium speed 5247 film. "We're shooting in daylight with a No. 85 filter on the camera lenses," he says.

The side camera has a 35mm lens, and it is set for a tremendous split at stop T/6.3 or 8. "I use the high speed film for this because it gives me two stops," Finnerman explains.

Even in a tight shot like this, there is no problem mixing 5247 and 5294 films. "They're that close in image characteristics," says Finnerman.

That brings us to "The Dream Sequence Always Rings Twice," a mainly black-and-white episode, which received broad national media attention. "It was Glenn's idea," says Finnerman. "He asked me how I would like to shoot a black-and-white episode. I had never shot anything in black-and-white, though I was Harry's operator on some black-and-white features."

The story involves a visit that the detectives make to see a prospective client at an old night club, The Flamingo. They hear about a murder that occurred at the club 40 years earlier. A musi-

cian was murdered and his wife, a singer with the band, was arrested. However, there were still doubts as to whether her lover, a trumpet player, actually committed the crime or was a reluctant accomplice.

That night both Willis and Shepherd dream about the murder – in black-and-white. In Shepherd's dream, the wife is an innocent bystander who gets blamed for the murder. In Willis' dream, the trumpet player marches to the scheming wife's tune.

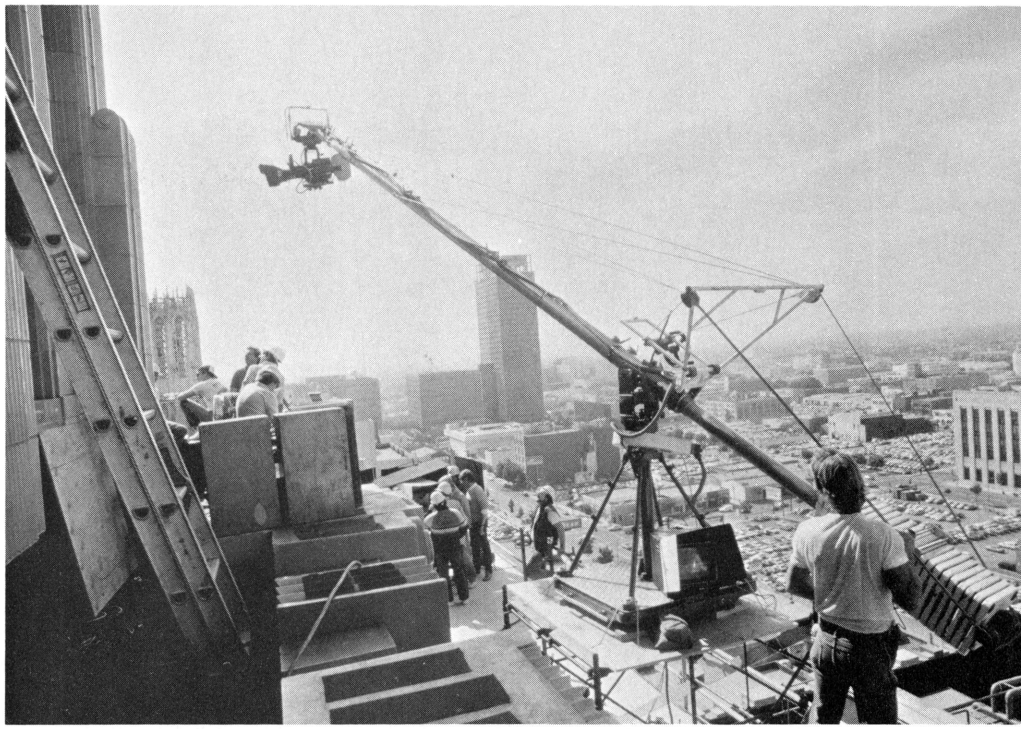
Finnerman's first thought was that he could shoot the whole thing in color, and have the lab or video post-production house pull black-and-white prints. However, once he heard the full scope of the idea, he was fascinated and focused on shooting the dreams in black-and-white.

"The idea was to shoot one dream with a 1940s MGM look and the other in the Warner Bros. style, more down-and-dirty," he says. "We had a meeting involving the art director, production designer, wardrobe, the producers and myself, where we started thinking in terms of gray tones. Colors record differently on black-and-white panchromatic film depending upon their reflectivity. Blue photographs as white, red comes through dark, and so on."

Props selected for the black-and-white episode were mainly black, brown, beige and red. Finnerman knew a retired makeup man, Dave Grayson, who had broad black-and-white experience, and wardrobe developed costumes which were properly color-corrected. Dave supervised the makeup on the show.

The main location was the Aquarias Theatre, in Hollywood, a monstrous interior. "We tore it apart, aged and rebuilt it," says Finnerman.

Finnerman tested both Eastman Plus-X and Double-X films. "I would have needed more than 300 footcandles to shoot at stop T/4 with the Plus-X film, he says. "That just wouldn't have been practical."



Above: ***On location above downtown L. A.*** **Left:** ***Three cameras are used in photographing the many in-car scenes.***

Double-X film is rated for an EI of 200, but Finnerman found that it tested well at 400 . . . "I couldn't see a real difference," he says. "It was just a marginally flatter look."

He shot tests with 25 footcandles of key light, and pulled good depth at stop T/2.8. Fortunately, the theater had a dimmer lighting system covering the stage where band scenes were filmed.

"The panchromatic film doesn't see Kelvin, so using the theater lights was no problem," Finnerman explains.

That allowed him to spot his fill light on scaffolds. "We did that to create dimension," he says.

The vast interior had a basic key light level of 15 to 20 footcandles, and Finnerman worked mainly at stop T/2.3.

Even in scenes made in practical locations Willis and Shepherd are given studio-type lighting.

In order to develop two contrasting lighting styles, Finnerman and the producers spent a lot of time looking at old MGM and Warner Bros. movies, including *Casablanca, The Maltese Falcon, A Streetcar Named Desire* and *Mildred Pierce.*

"We settled on *A Streetcar Named Desire* as a model for Cybill's dream, and *Casablanca* for Bruce," he says. "Then, I forgot all of the rules about shooting color. I remembered Harry (Stradling, Sr.) telling me to take the light around until it scares you when shooting low key black-and-white scenes. I did everything but front light, except for a dance number that Cybill did and that was front-lit. We used cross and backlighting to create dimension."

In contrast, the Willis dream was more guttural. Finnerman used light and shadows to create halftones, and double fog filters to manufacture the illusion of grain, a more down-and-dirty image.

The differences were very subtle; something that viewers were more likely to sense than see. Most of the time, Finnerman was running two or three cameras for coverage and five on the musical numbers. The biggest problem was separating the walls. "They were hot," he says. "I hung just about every light that we had. MGM Labs did a great job . . . they gave us just the right gamma for each of the two versions."

For Cybill's song numbers, Finnerman used the netting that he saved from *My Fair Lady,* which flared reflected light from a necklace she was wearing. This created a similar effect to a star filter.

"She's a bubbly personality with a great voice," Finnerman says of Shepherd. "It was easy to imagine that you were there in the mid-40s, and she was a songstress with a dance band. I think she looks even better in black-and-white than color. And Willis, he's a young Bogart."

What makes *Moonlighting* so special?

"In a way, it reminds me of *Star Trek,*" Finnerman answers. "Viewers are fiercely loyal. Working on this show is like belonging to a special club."

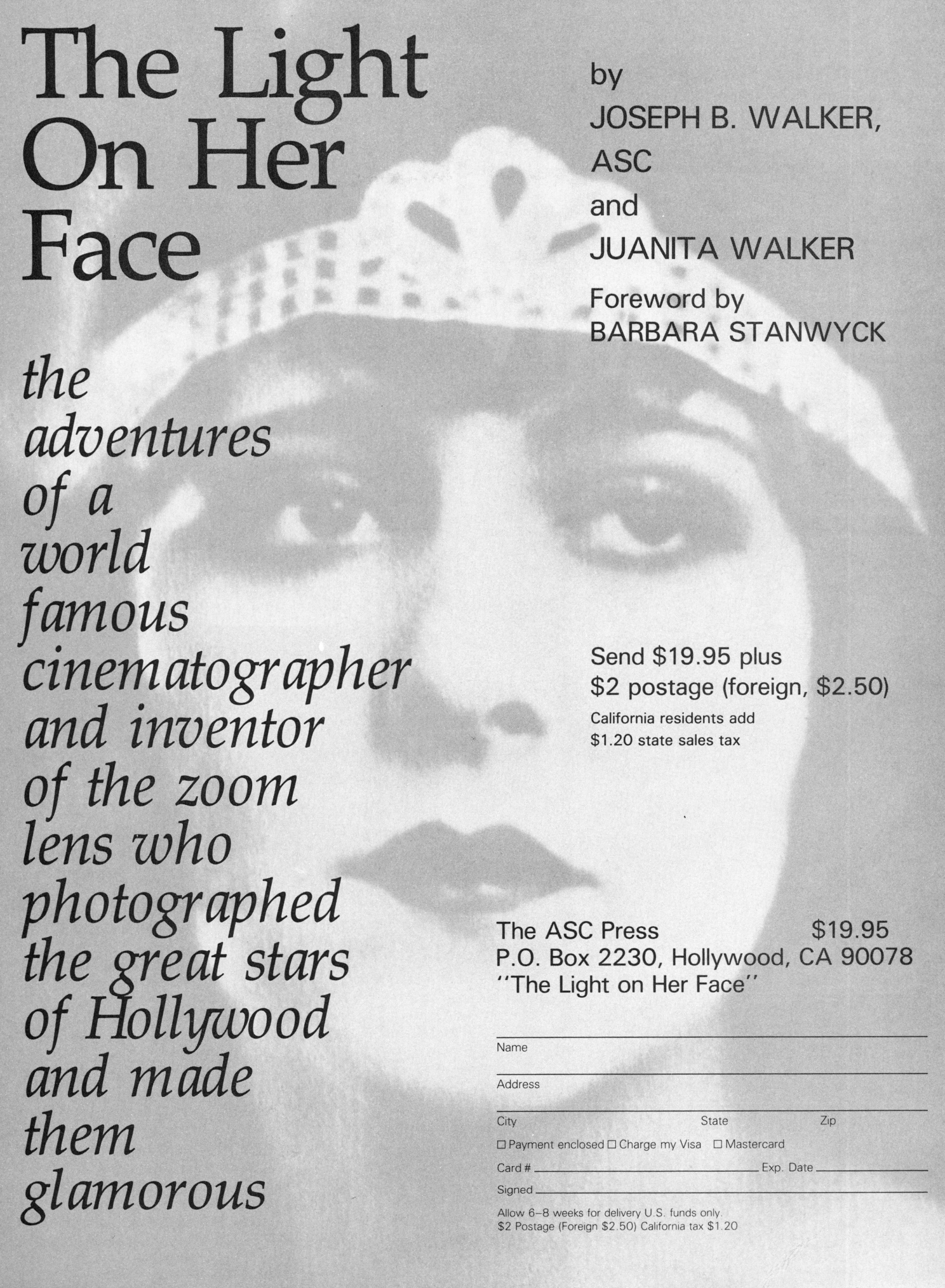
It also proves you can create good television without committing mayhem. "Violence on TV is depressing," Finnerman observes. "You only get a couple of fleeting moments here on Earth, and I want to do something good in that time.

"I'm not a purist, but everyone has to make a stand someplace," he continues. "Working on the production of an episodic TV show entails long, hard hours, and it can be very stressful work. If you are going to put yourself through that, you might as well be doing something which you can be proud of."

In recent years, Finnerman had mainly worked on TV movies and mini-series. Why put himself through a grind like *Moonlighting*?

"I couldn't be happier if I had just shot *Out of Africa*" he says. "I look forward to coming to work everyday. I believe that we have done something special – the cast and crew are very much a family."

Bill Clark, SOC, is Finnerman's operator, and Bill Loranger and Mike Stradling are assistants. The second unit is headed by Roger Shearman; the



The Light On Her Face

by
JOSEPH B. WALKER, ASC
and
JUANITA WALKER

Foreword by
BARBARA STANWYCK

the adventures of a world famous cinematographer and inventor of the zoom lens who photographed the great stars of Hollywood and made them glamorous

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Much of the charm of* Moonlighting *lies in the contrast between the sometimes seedy Willis and the always glamorous Shepherd.

operators are 'Chuy' Elizondo and Dick Thorpe, and Joe Valentine handles the Steadicam image stabilization device used on locations.

"My key grip, Walter Cripps, was my dad's key crab dolly man," Finnerman notes. "We've been together almost from the day I started as an assistant, 32 years ago."

Finnerman directed the final episode of the current season and is slated to direct some shows next year.

"I'm looking forward to that," he relates. "Earlier in my career, when I was at Universal Studios, I directed several episodes of *Night Gallery*. I remember that I directed one episode starring Leonard Nimoy. Later, he directed an episode that I was shooting. That was an interesting experience. You can learn some important lessons by occasionally stepping out of your normal role."

One of the things he has learned is that on *Moonlighting* or any other film, ultimately you are lighting to please yourself, rather than 20 or 30 million viewers. Of course, this occurs within the parameters of the show and the obligations you have to the producer, director and cast.

What advice would he offer to a youngster breaking in?

"Never be lazy," he answers. "Try to be creative. Anyone can bounce light for exposure or to get a soft look. To be different you need to learn what happens when light strikes a particular emulsion. How can you bend the film to get the most out of it during a particular situation? You can work with and stretch your film. If you are having a good time, you are probably doing good work."

Of course, there are some things you are born with.

"I'm a very visual person," says Finnerman. "I read a script, and I draw pictures in my mind of what the scene should look like. I envision every nuance of light, and I can tell you then whether the key should be 10 or 20 footcandles.

"But, you can't sit in your chair on the set. You have to be thinking and looking every second. I'll move that scrim here, and turn that light off, and another one on, and add a little color until everything falls perfectly into place. I am a great admirer of Joe Biroc who works this way.

"Most of all, you have to remember, in the end people are going to come to you, and if something was less than perfect, you can't blame it on the camera, lens, film or the operator. You're the one they picked to do the job right. It's your responsibility." △

(Bob Fisher is a versatile writer of film/video articles and is a steady contributor to American Cinematographer.)

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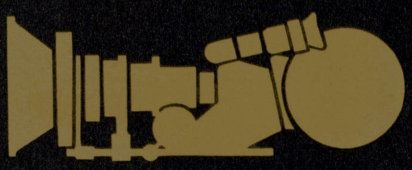

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POLTERGEIST II
THE OTHER SIDE
—the Photography

Produced by Michael Grais and Mark Victor
Directed by Brian Gibson
Photographed by Andrew Laszlo
Special Effects by Boss Film

by Ron Magid

In *Poltergeist II: The Other Side,* America's favorite target of psychic activity, the Freeling family, is once again hounded by ghoulies and ghosties and long-legged beasties. Flattening their Cuesta Verde tract home and scaring them all half to death wasn't enough for those vengeful spirits, who have followed the Freelings to a new residence in Arizona, determined to continue the reign of unholy terror they began in 1982 with Poltergeist.

The man responsible for capturing the stark terror of the Freeling family on film is veteran cinematographer Andrew Laszlo, ASC, who adamantly maintains that despite its horrific content, *Poltergeist II* is not a horror film. "*Poltergeist II* is a very scary film," he concedes. "It has some very scary elements, but we've tried very deliberately and taken great pains not to have those elements that standard horror films have: the elements that make people jump out of their seats without regard to the film's content, story and continuity. *Poltergeist II* is the story of a family that is haunted through the generations from the grandmother to the mother to the little daughter, and nobody knows why or who by."

Though certain elements of *Poltergeist II* were deliberately designed to meet and satisfy the expectations of the audience whose appetite has been whetted by the first film, the current production has a far less brightly lit quality than *Poltergeist,* since Laszlo and director Brian Gibson opted to go for a more dramatic, more disturbing photographic tone. "However, a lot of the characteristics of the original film were followed simply because, I suppose, everybody felt it would be a good policy to stay in step with what had been a very successful motion picture," Laszlo says. "The cast is basically the same and we follow the same family through their second ordeal, but that is where the similarities start and end. Brian Gibson obviously wanted to put his mark on the film, and I believe he has accomplished that. The flavor of the film is slightly different from *Poltergeist* because the story is different and because all of us have a different vision, a different imagination and a different method of execution. It is essentially a very scary movie and it uses all the elements available to make a movie scary through photography."

Photos by Larry Barbier

While Laszlo's career in motion pictures is lengthy and his depth of experience unfathomable, *Poltergeist II* marks director Brian Gibson's second feature. Laszlo found working with Gibson to be a rewarding experience. "Brian has had a very lengthy career in England with documentary films, and commercials," Laszlo explains, "and that was an extremely good background for this film. I think what it really comes down to is talent and the desire to interpret that script and do the film, and Brian had no shortage of that. He is a talented director, and it was, in some ways, very fortunate that his second feature – his first feature in the United States – is really the big picture of the year for one of the biggest studios, MGM. It put tremendous pressure on him, but he has done a good job. The film is, in my opinion, very even, it holds together well, and I don't think the suspense ever lets up. Even when the action is light, the tension is always there."

***The Freeling family, children on opposite page and parents pictured here, in various stages of fright and surprise, emotions typical of* Poltergeist II.**

The family encounters horror in their garage. Arc welders with special rods helped create the sparks.

One of the first indications of that tension in the film occurs at a shopping mall where the Freeling's daughter, Carol Ann, suddenly feels as though she's being followed. "Indeed," Laszlo confirms "there is this man in a strange looking outfit and hat walking through the shopping center, and when the little girl looks back and sees him, she is horrified and she doesn't know why. From then on, the apprehension builds, and we took great pains to find aspects of the shopping mall, located in Encino, California, that were not too bright. The spirit of Kane, played by Julien Beck, comes out of a dark, enclosed corridor where the far end is open and very bright, so he is silhouetted by the bright background and you really cannot read his face until he walks out into the light. Then, of course, he walks through people and people walk through him, and the little girl realizes he's a spirit – he's not alive."

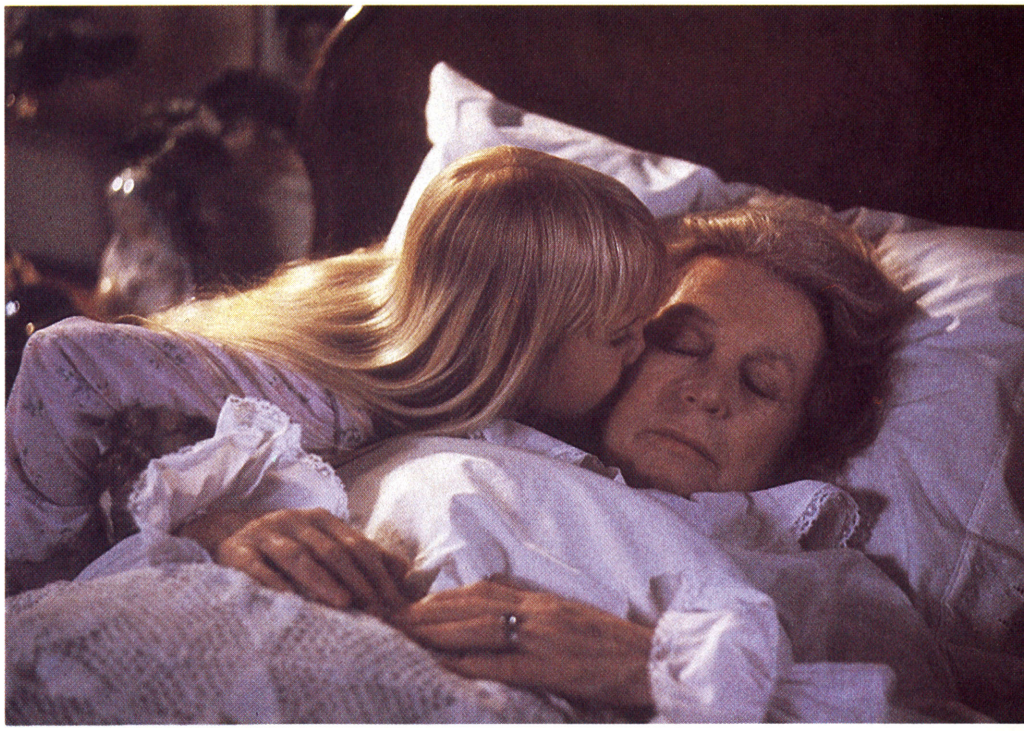
Due to the large number of special visuals required for *Poltergeist II*, there were several weeks of blue screen and other effects photography shot on the stage at Boss Film Corporation by their in-house special effects cinematographer, Bill Neil, who has worked with Richard Edlund for the past six-and-a-half years. "Bill Neil is, in my opinion, one of the outstanding experts in that kind of photography," Laszlo states. "He knows a lot of things I don't know – how the particular photography of a person hanging on a thin wire will be included in a shot while all the other objects, such as equipment in that shot can be eliminated later. I was on that stage with Bill every day, and it was important for me to be there from the very beginning, not just because I wanted to see what he did, but because I wanted to consult with him about what to do in certain instances, knowing what I was going to do with the particular scene for which he was shooting the elements, and, of course, I had to be there to consult with Brian."

Once principal photography began, Laszlo often found his crew working side by side with the Boss crew since any of the shots that were to incorporate matte elements, blue screen elements, or other effects footage had to be photographed in 65mm, as opposed to the 35mm anamorphic format of the rest of the film. This created some difficulties in terms of the lighting, which, for instance, required a much higher T-stop than Laszlo preferred to work with. "There was no difference as far as the style of the lighting was concerned," Laszlo points out, "but there was a significant difference because of the requirements of the 65mm equipment and because of the special effects photography. Special effects photography uses 65mm equipment to begin with because they get a much more detailed and sharp negative, obviously. The negative image is quadrupled from 35mm, so that everything is four times as sharp and four times as well defined. Because of the equipment,

because of the requirement of a great depth of field and the special requirements of that type of photography, I had to be working at a much higher light level than I would normally work at on a dramatic motion picture which requires low key photography for effect. So when they told me they would like to have enough light for a T-4 or 5.6 stop, that was so high above the light level I like to work with, that it almost took some reorientation to do it. You have to know when to say, for an artistic reason, "I really don't want to light this shot for a T-stop of 4 or more, but I know if you shoot it at my light level, stopped down to T-4, we can safely rely on the lab to give us that little push in printing we'll need to get a good, gutsy image on 65mm negatives. Of course these and other limitations complicate one's life. The cinematographer's art, unlike painting or sculpting, is more restricted by the equipment and the techniques and the materials available, and the total of all of these factors comes up as the final image. So along the the way, we cinematographers like to eliminate difficulties rather than having to deal with them. Somewhere amongst all the technicalities and mechanics, you have to find that small, or sometimes very large, area we refer to as visual art."

Laszlo did not allow the difficulties of lighting for 65mm interfere with his highly individualistic methods during the making of the film. There are two specific sequences in *Poltergeist II* where Laszlo used unorthodox techniques to produce strikingly eerie lighting effects. One instance occurs at a time when the family makes a desperate bid for freedom, trying to escape from the house using the station wagon in the garage. "When they run into the garage," Laszlo recalls, "the spirits continue to attack and an electrical conduit tears itself loose from the electrical boxes and sockets, and sparks as it swoops around like a snake. At that time, the lighting was accomplished in a manner I've used successfully before in other pictures. Interestingly, on the largest stage at MGM, with a wealth of electrical and lighting equipment available, we brought in two arc welders and we kept striking steel plates with brute carbon replacing the welding rods so that not only did we see the sparks coming out of the electrical conduit, but we had huge flashes occurring in various spots in the garage.

"Sometimes the actors were silhouetted against a wall that had a huge flash on it, and sometimes they were front lit by a flash that was directly in front of them. We used the arc welder as a supplementary device that would produce not only a shower of sparks, but also a blue flash at those times when we needed it. There are, of course, several conventional ways of creating flashes, but none of them could give me the quality flash that we achieved with those arc welders simply because they were unpredictable. We didn't know how big or small or frequent the flashes were going to be, there was no consistency, so the result was always interesting. There were other sources of light as well. The actual lighting is provided by the ceiling lights in the garage. There were two of those, one of which got blown up when the electrical conduit pulled loose."



Carol Anne and Gramma Jess in scene with special story point. **Below:** ***Laszlo and Gibson check setup.***

A sequence depicting Steve and Diane Freeling's descent into an ancient subterranean cave where over 130 years ago, the members of the religious cult led by Kane all perished at the same time, provided Laszlo with yet another opportunity to use his innovative and unusual lighting to great advantage. "The cave was a challenge," Laszlo remembers. "It was very difficult to work on that set. We had to create a horrible feeling, and come up with an interesting image which, technically was very hard to do, because of the way the set was designed and con-

New terrors lurk 'round every corner for the Freelings as the Poltergeist story unfolds and the ghosts return.

structed. The results, in my opinion, are very satisfying. I don't think there's a single picture I've worked on where I haven't suddenly come to a scene and looked through the camera and realized that I've caught one – you know, the big fish had hit the line – and I think that the sequence in the cave might be just that, and I feel that it was the high point, as far as my photography is concerned, of this film. The difficulties involved were that I was working on a set for a cave that was really a cave, with a full ceiling. We saw 360 degrees, so it was very hard to light. We had several shots that were lit by candles, and we had several shots that were lit by Coleman lanterns, a device I used in *First Blood*. Of course, the quality of the light coming out of a Coleman lantern is somewhat different as far as color temperature, as far as direction, as far as intensity, as far as consistency – it's different from one designed for motion picture lighting. It does one very interesting thing, however, the lanterns move with the actors carrying them and when they move, the lit areas and the shadows move, continuously changing the atmosphere. The area where the actors are is lit up as they progress through the set, so you don't see things immediately, you see them as they see them. The actors were carrying the lanterns, and in fact, Craig Nelson who plays Steve, the father, had collaborated with me in that I carefully laid out for him what to do with his lantern at certain times during the particular scene we were photographing. He did such a beautiful job that I offered to help him get a card in the electrician's local! Seriously, I'm very grateful to him. He was not only able to do a great job acting under some very difficult conditions, but he effectively helped me light the scene. It was hard to work in the cave set. Once we got on the set, we were in a stone tunnel with grades and dripping water where cast and crew slipped all over the place There were some fast camera moves, hand held, Panaglide or dolly shots. We went

Craig Nelson, Oliver Robins, JoBeth Williams and Heather O'Rourke seek the spirits.

through the water and often had to film through tiny little openings in the walls of the set. The difficulty was great, but then again, nearly every film has its difficulties and that's what makes my end of the business so tremendously enjoyable. There never was a standard script that I could pick up and say, 'This shot is a standard #47.' At times, all the preparation that a cinematographer makes – and there are weeks and weeks of it – we get on the set and have to improvise on the spot at the very last second!"

Although Laszlo like to experiment with highly unorthodox lighting techniques, he is a firm believer in motivated light within a given scene, provided he feels that "it serves the script and the moment of the story as best as I think it should be served." In other words, certain scenes require a more stylized lighting treatment in order to come across effectively. One such sequence involved a series of shots of Steve Freeling as he is gradually possessed by the spirit of the great beast after swallowing a sinister tequila worm. "When Steve first starts out drinking, he is in a very normal lighting situation, sitting in his den in his comfortable leather armchair. As he continues drinking and gets drunker and drunker, he goes up to the landing halfway between the level of the den and the bathroom. He sits down on the landing and drains the bottle to the last drop. The worm goes into his mouth and we can clearly see that he swallows it. By this time, the lighting is becoming much more pronounced, more shadowy, more mysterious, and yet still within the realm of an acceptable situation, but we're beginning to take artistic license. After he swallows the worm, he stands up and his face disappears into the shadow. When he turns to the camera again, within the same shot, the light has totally gone kaplooie! It's just horrible – his face is changing, his eyes are bulging out, the light is coming from below him, and there's nothing but darkness and shadows on his face. I threw a shadow across his face so only one eye can be seen as he moves in and out of that shadow. The rest of the light falls off as this transformation takes place. As he begins walking up the stairs, his shadow is projected on the wall, and though that's the way it might look, it does have a very ominous feeling. Then he goes into the bathroom, which is perfectly normally lit, but by this time he looks weird and we know something is wrong because his daughter pulls away from him and he chases his wife into the bedroom and attacks her. The bedroom was lit by one practical light on a night table and another in the closet, supplemented by small units. As he attacks his wife, the night table is knocked over and the light falls on the floor and that becomes the major light source so that once again, there are shadows and the scene is back lit or side lit depending on where the camera is. When Steve finally disgorges the worm, we play that action against the light on the floor. The action is horrible, and it's going to scare a lot of people!

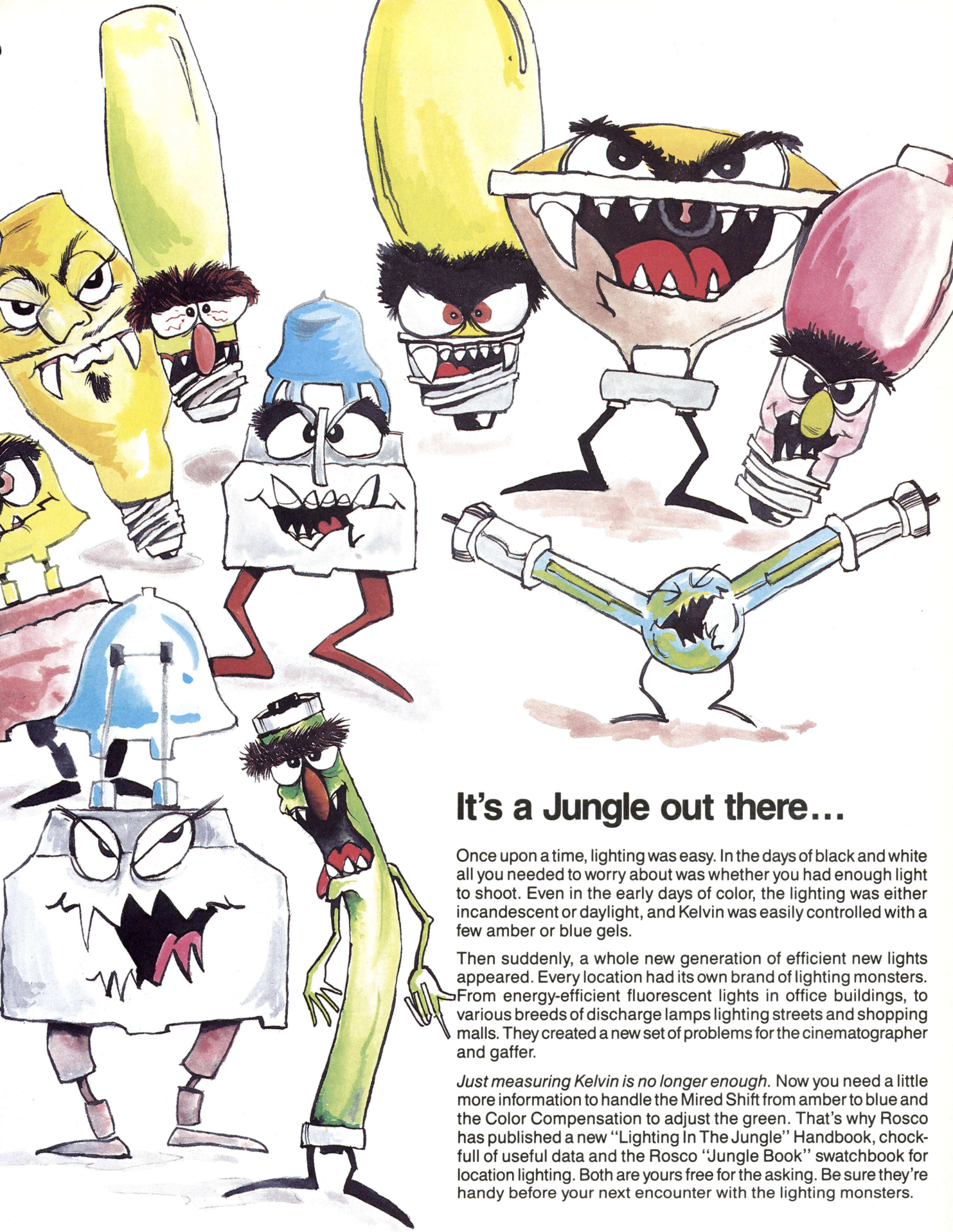
Crew prepares high camera angle.

It's something extraordinary. The worm, now a rapidly growing beast, falls on the floor and crawls under the bed. The bed starts shaking and gets turned over. The creature crawls out and now it has a head and little legs and little arms, and the lighting, once again, becomes part of the mood, very sketchy and under lit.

A rather extensive camera move that follows Carol Ann through the various rooms upstairs at night also required a highly stylized lighting approach. "As the shot begins," Laszlo says, "you see the little girl sleeping between her mother and father in their bedroom. It's what I would call a fairly standard, darkly lit night scene. Then she sits up and quietly gets off the bed and begins walking down the hallway, against a far wall that is lit so she's a silhouette. I took the liberty of lighting up the wall, and if you question it, fine, I'll tell you that it's a night light downstairs. I doubt that anyone will question it. The little girl then goes into her grandmother's room, which, by contrast, is very pretty. Even though she's just died in there, it's lit up in a higher key than the rest of the house. Why? Because it felt right for the scene and that's the way we did it. That's what the mood of that particular shot called for. She kisses the dead grandmother, comes out of that room and goes into her own room, which is lit very low key, yet we can see everything because of little areas of light here and there. What lights it – who knows? Then she gets into bed, picks up the toy telephone on the floor and talks to her dead grandmother, and that's the end of the scene. Even though I strongly believe in motivated light, in the case I just described, the idea was that the room was in total darkness, but if I put it into total darkness, you won't see what's happening. Not only that, but I think that as cinematographers, we have a wonderful opportunity to create feelings or to take an artistic license and create an illusion of darkness so that, yes, you'll agree that this little girl walked into a dark room without any lights on and yet you could see everything."

Because of his penchant for doing the unexpected when it comes to lighting and camera techniques, Laszlo prefers to work with crew people who have worked with him before and who understand his more unorthodox methods. For *Poltergeist II*, Laszlo was pleased to be able to bring on Dick Meinardus as his first assistant, Larry Hezzelwood as his second assistant, Don Nygren as his gaffer, Len Lookabaugh as his key grip, and Bob Marta as his operating cameraman – most of them have worked with Laszlo before and he regards them as "family." He explains: "Most of the people on my crew have worked with me on a number of pictures, and it's a wonderful feeling to know that you don't have to give detailed instructions about what is involved with every shot. It's a wonderful feeling to know that you have the friendship, loyalty, expertise and support of these people." △

Ron Magid writes for various film magazines and is a regular contributor to American Cinematographer.



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Photos by Virgil Mirano

POLTERGEIST II
THE OTHER SIDE
—the Special Effects

by Ron Magid

Boss Film's lengthy involvement with the *Poltergeist II* project began with a meeting over lunch between Richard Edlund and Mark Victor and Michael Grais, writers of the original "Poltergeist." Victor and Grais, realizing they had written a script that was more ambitious than MGM was willing to pay for, welcomed Boss's contributions in terms of cost-saving measures and alternate effects suggestions. "I brought John Bruno in as our effects art director," Edlund recalls, "and he began storyboarding the show in conjunction with discussions we had with all the various people at Boss and the producers. In this way, we introduced some ideas, changed certain ideas, decided to do some things and not to do others, and we ended up with a very complete set of storyboards for the entire effects sequences and some of the live action that surrounded them."

Because the politics involved in bringing *Poltergeist II* to the screen were highly complex, change and flux became the norm as directors would come on the project, make suggestions, and then leave. After two months, the man who did direct the film, Brian Gibson, was hired, and there were more changes, although it didn't end there, as Edlund explains: "When Brian Gibson came on, we went through and re-storyboarded everything, and even though many things wound up the way we pictured them originally, there were a number of changes. We spent almost five months storyboarding the picture, and it was very difficult to get Gibson to settle on an idea, and there were constant changes he would make all the way along."

Though constant changes tend to de-stabilize any production, especially a special effects film, the main crisis that Edlund and his Boss Film team faced was the onus of topping their work for *Poltergeist,* spectacular visuals they had created for the most successful ghost story ever filmed. "We're following a hard act," Edlund admits, "because all of us really put our hearts into *Poltergeist,* which was one of the funniest movies I've done. We had to discover what ghosts actually looked like and what people's subconscious minds would accept in terms of the spectral images of the first picture. That was the challenge of "Poltergeist," because we had a situation where the effects were taking place in what I call an anthropological time capsule: 1982 and the American Dream was the state of the family, with Steve Freeling being a successful real estate salesman living in a wonderful house with all the latest stuff and a nice new station wagon. The difficulty in doing a picture like this, as opposed to *Star Wars* and *Raiders Of The Lost Ark,* is that we're dealing with a realistic surrounding, everybody's living room. Therefore, the effects had to not only be peerless, they had to really work in the scenes and look as though they weren't glued on or phony. With *Poltergeist II,* we're dealing with an audience that is already honed out to a pretty fine edge of expectation, and therefore, the material we came up with for the picture had to be at least as good as those of the first film."

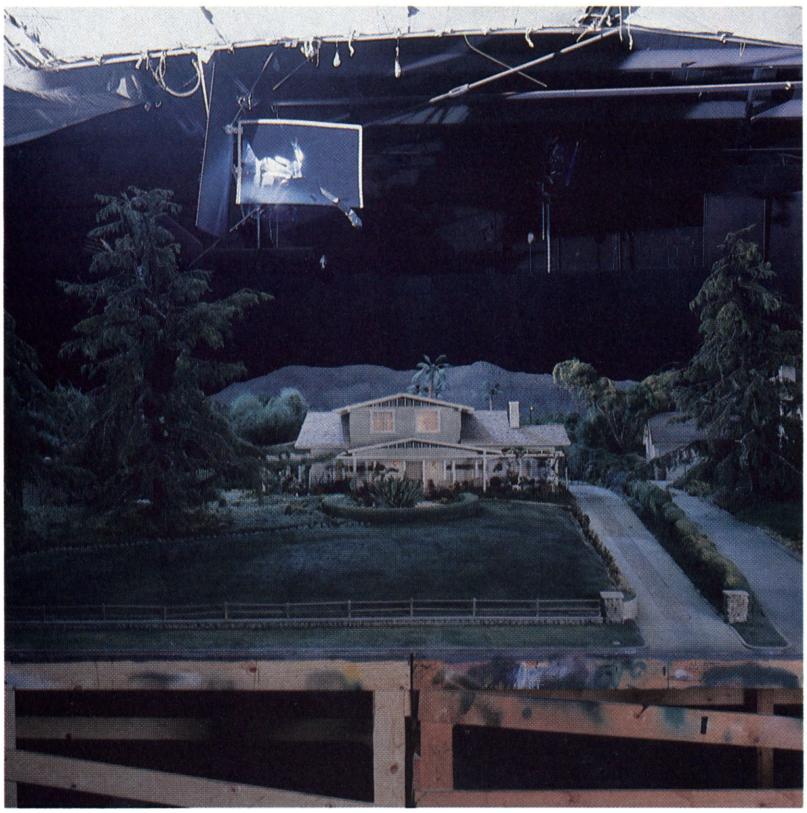
While storyboards contiued to be drawn and effects developed, locked down, and tested, the miniature department at Boss Film, headed by Mark Stetson and Leslie Ecker, began the construction of a fairly large tabletop model of the Freeling home and its surrounding environs, including the homes of four neighbors and a mountain range in the background. It took a team of approximately seven modelmakers nearly seven weeks to complete it, but when they were finished, the miniature was, in many ways, an improvement over the full-sized house set MGM had built in Altadena, California. "The actual location house was supposed to double for Arizona," says Stetson, "but we thought the area didn't really look a whole lot like Phoenix, so we made some changes in the vegetation to try to bring that across. Part of the purpose of building the miniature was to allow for wider shots than could be practically lit on the location site for a night shoot, so what we got was something that could be shot five lots wide, instead of about one lot wide, which is the widest they ever got at the location."

"We also pushed the surrounding houses out a little wider from the featured house," Ecker adds, "so it would look a little more isolated. We reproduced every stick of furniture and hanging plant in exact detail on the hero house, and the lawn was made from a kind of fake fur sprayed green. The hedges and trees were very impressionistic because we were shooting at night, and the ivy was made using sisal covered with little oatmeal leaves painted green."

In addition to utilizing miniature landscapes, the effects for *Poltergeist II* run the state-of-the-art gamut, including cloud tank effects, animation, puppetry, matte paintings, and mechanically articulated creatures. Significantly, almost none of these effects were achieved singly by any one department. Even the "simplest effect," such as rain falling from a cloud at night, was enhanced through touches added by other divisions at Boss. The shot in question is one of the most elegant effects in the film, involving a massive storm that gathers above the Freeling home only and torrents of rain that drench the Freeling lot but leaves those of their neighbors bone dry. The sequence, which takes place in the heavens over the Freeling house, was designed to show how rain begins, and has a perturbing mystical quality about it. The initial effect was created by Garry Waller, special projects supervisor, utilizing a large water tank into which various dyes can be placed to simulate a variety of natural and unnatural phenomena. "That was one of the first shots we got to do," Waller explains. "John Schreiber and I made the cloud by injecting paint into the water, and as the dye expanded, we had flashes in the water that were timed to simulate lightning. We actually developed a technique to get glass beads into the tank to simulate raindrops without rippling the water, which creates dark shadows on the clouds and ruins the illusion. Then we crosslit the beads so that one side of them had a kick, and they were bladed off so that they weren't so bright as they came out of the cloud."

Though the effect was technically fine as it was, it was decided to have Mark Vargo, Boss's optical effects supervisor, add some further refinement to the shot by superimposing stock rain footage. "The shot as it was didn't have the depth and dimension to suggest a rather large downpour coming at the camera," Vargo says. "The cloud had been shot with a wide angle lens to give it scale, but it didn't have the impact that the director wanted for the length of time it was going to play on the screen. We decided to break it up into three stages of development. At the beginning, once

Opposite page: ***Animated ectoplasm in Indian lodge as Nelson and Sampson look on. This composite is courtesy of Boss Film.*** **Above:** ***The haunted Freeling home at night.***

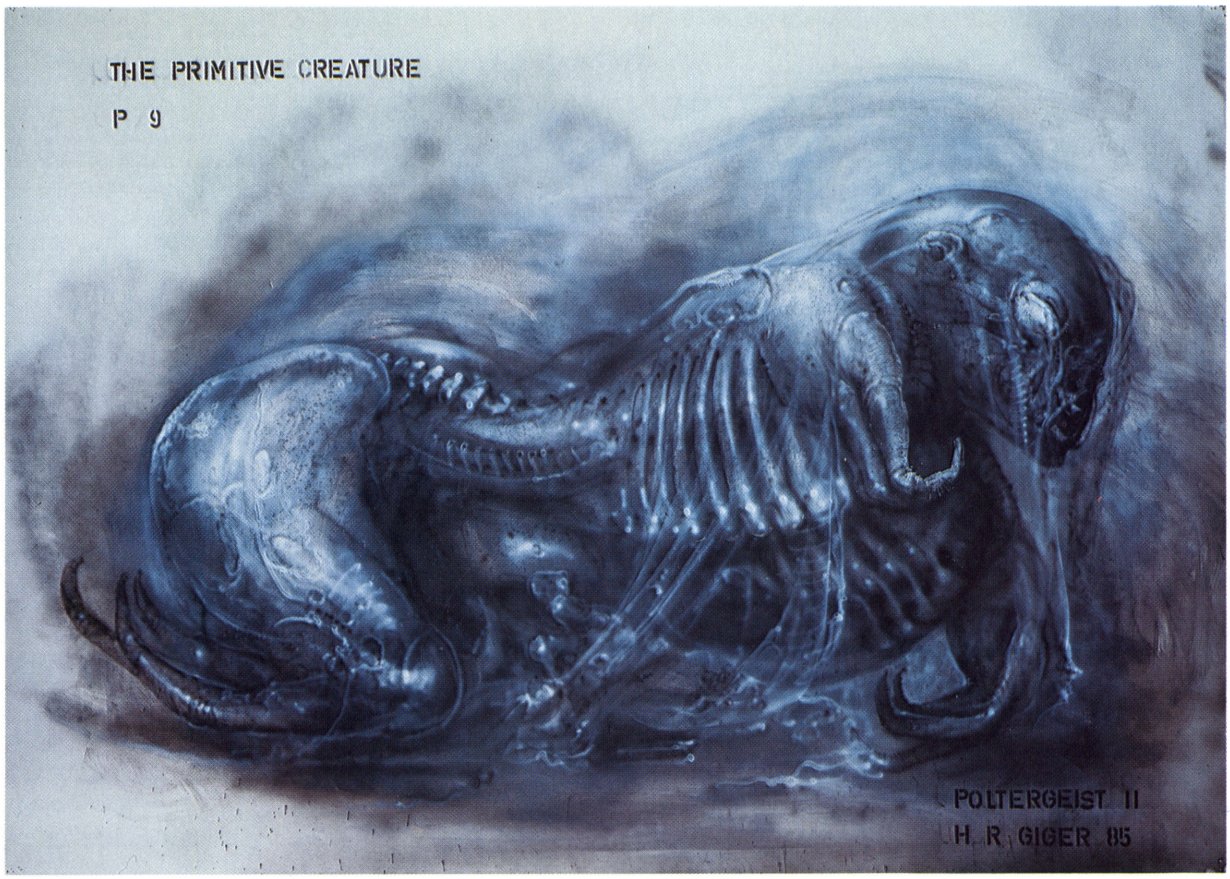


Freeling home in miniature with manufactured cloud shadow.

the glass beads had started to fall, we faded in actual rain at the horizon. Then we next dissolved rain onto the midpoint of the cloud, so that it started to fall higher and appeared to be getting closer to the screen. At that point in the dissolve, we threw the farthest element of the rain out of focus, so the rain appears more tangible, as if it is moving closer. Then we dissolved one more time so that the rain was full frame, as if it were on the camera, and during the course of the final dissolve, we added diffusion to the cloud to create the look that rain will give a subject that's behind it." It may seem like a lot of work to recreate a simple act of nature, but, Edlund insists, "We always try to add little subtle extras to our shots to make them look convincing and natural, and it's the optical department through which all these bits are passed."

Another difficult optical effect was required to convince the audience that a shopper in a mall had passed through the seemingly solid body of the ghostly nineteenth century cult leader, Kane, played by the late Julien Beck. "That was one of the trickiest traveling mattes in the show," Vargo admits. "Kane was shot against blue screen, and intense efforts to maintain scale and lighting were worked out by visual effects director of photography Bill Neil to get them balanced properly. The transition of the person in front of and then behind Kane was created by way of roto-mattes, and efforts were made to insure that they looked unlike typical hard-edged mattes. We were really happy with that shot, because until that person passes through him, you thought Kane was actually there, when in fact, he was matted in. We used a double trick there: Kane was matted in and the extra who passes through him was rotoscoped."

Certainly the goal of any visual effect is to fool an audience into accepting a trick shot as the real thing, yet nowhere is this more difficult to achieve than in the case of full frame matte paintings, where the live action element, if any, is very small. Four full frame mattes were painted by artists Michelle Moen and Matthew Yuricich, working under matte department supervisor Neil Krepela. Two of these paintings featured different angles on the "power spot," a tall, spindly rock formation rising up through the center of a vast canyon. It is here that the Indian shaman, Taylor, played by Will Sampson, conjures his benign magic from out of a fire built at the peak of the strange rock formation, and it was necessary that he be seen from a god's eye view at an impossible height directly above the "power spot," as well as from another angle looking across the canyon. "The scene was set at night," Krepela observes, "and whenever you do landscapes at night, it becomes difficult because references are not easily obtainable, and usually the references you do find were shot during the day and printed down. Everybody's got their own opinion of what a night shot should look like, so Matthew Yuricich had quite a time getting it all to work. The mattes were composited using rear projection onto the appropriate cut-out areas of the paintings, and photographed using "Compsy," (a robotic matte camera.) Yuricich also put little subtle moves on everything, which really helped out and were almost essential since most of them were full matte paintings." Edlund concurs with Krepela noting that "the essence of a great matte shot is to have some sort of life in the shot, because otherwise, it looks just like a dead painting." For another shot in the same sequence atop the "power spot," Garry Waller utilized a technique of pulling silk through a cloud tank in order to create amorphous specters that would emerge from the fire and magically wrap themselves around Taylor's body. "I drove everyone crazy with the silk effects," Waller concedes, "because I knew the animation department had a big burden with the ectoplasm job, and I thought that with silk, we could simulate some animation effects, which eventually worked out really well. When we see Taylor on top of that rock in long shot, the



The creature as conjured up by Giger and, below, the creature itself.

ghosts look more like smoke coming out of the fire. They're very ethereal, and have a real loose form. They were marionettes strung out in the tank and then pulled in reverse very slowly and overcranked a little bit. Then the optical department added a little bit of moiré to give it a twinkle and to take the edge off it. We used a lot of silk, actually, for a later part in that sequence where the smoke comes out of the fire and wraps around Taylor in a tighter shot. That was pretty interesting because we were running to get it shot and done so we could prove that it worked, so we shot it going around itself instead of wrapping around a black pylon, which would have given it the effect of going behind something. Since we didn't do that, Annick Therrien and the animation department did some really intricate rotoscoping tricks, and Chris Regan developed a soft and hard matting optical technique to make it look like the specters went behind Taylor and in front of him at the same time."

To describe the motion of the silk in the tank, Edlund uses the metaphor of a Chinese calligrapher who uses a large brush to create an action character poem in one sweeping, graceful movement: "It's a kind of calligraphy that is in the movement and the energy he puts into his body as he does that . . ." Here Edlund painted a great swirl in the air, his entire body working with the motion of his arm. "That is what gives the real dynamics to the piece." In order for the dynamic action to create a convincing visual effect, however, it must be coupled to a sophisticated scientific method, Edlund explains. "For the sequence involving Will Sampson, in order to make it look like the specters were swirling around him, the distance away, the optical effect of the water in the tank in terms of how it modifies the focal length of the lens, all of these factors come into play. If we don't have it just right,

then it doesn't work and it looks wrong. If you have all these things under control, if you have your physics and your mathematics right, then the art you do within that framework is going to really work."

A completely different type of spectral imagery was needed for an eerily beautiful scene in which some 40 spirits materialize on the Freeling's front lawn at night, amidst a swirling ground fog. In order to achieve the appearance of vaguely defined, shimmering ghosts, actors clad in the cliché bedsheet attire of silent movie spooks were photographed

Creative consultant Cornelius deFries at work on the Great Beast.

as they were reflected in a mylar mirror, which was brushed from behind, causing the image to distort and refract even more. The "ghosts" were shot by Matt Beck in groups of one to four actors, and the separate images were given to Neil Krepela to composite on the Compsy camera, which can be positioned anywhere along a track in relation to a rear projection screen opposite the camera. "The ghosts were shot with a 35mm camera with a cheap lens that gave it a distinct look," Krepela notes wryly. "We had then to blow the 35mm material up to 65mm and then combine all of the separate pieces of film into one. The original shots of the ghosts were primarily full frame portraits, but some of the specters had to appear fairly tiny in the frame so they would seem further away. They all had to be placed in the proper position and correct size in the frame, because they had to work in perspective as they rose up on the front lawn of the house. Before I re-photographed the ghosts on the Compsy camera, I got a color print of the house onto which I projected a photo of a drawing by John Bruno that showed the ghosts' size and position in the frame. Then I assembled a roll of the ghost footage we were going to use in the order I wanted to shoot them, and I projected them onto the rear screen as I moved the Compsy along the track until the projection size of each ghost matched its scale in the drawing. By pushing one button, the computer remembered all of the positions and returned to them when I went to shoot the ghosts. I would move the camera, shoot that section, and backwind the film. When I was through, instead of having to composite 40 pieces of film in optical, Mark Vargo had four. Garry Waller then shot little glows that were added on top of the ghosts." Mark Vargo calls the shot "an excellent example of making something out of nothing, because there's no live action whatsoever in that shot."

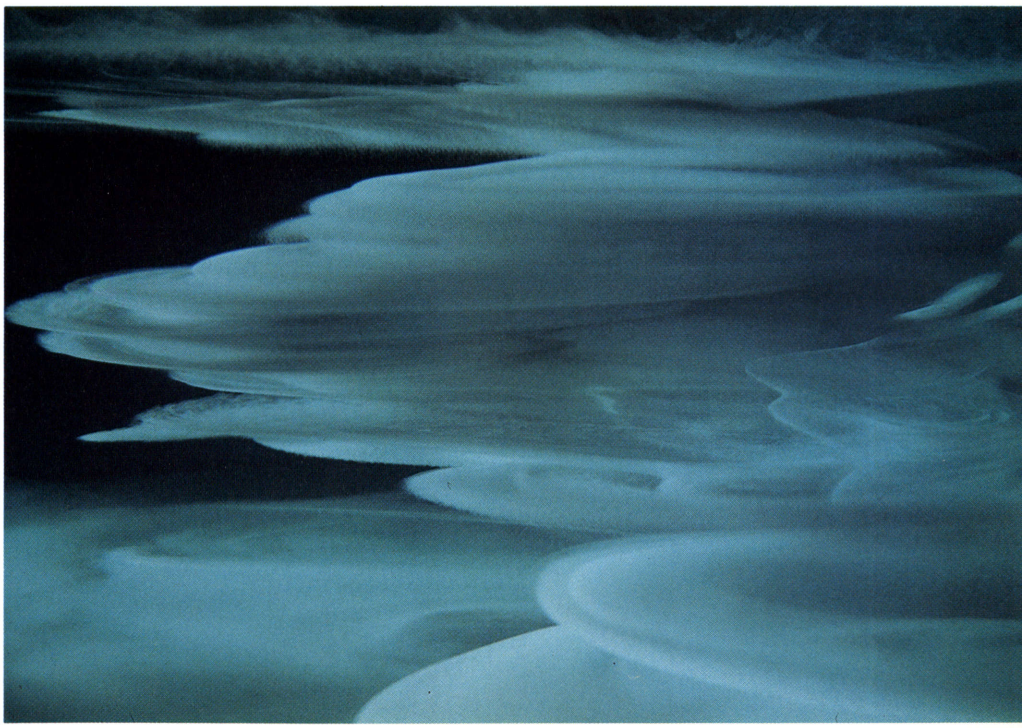
Creating illusions from nothingness is precisely what John Bruno, who served as visual effects art director, was faced with as he worked with the animators in designing the scenes involving ectoplasm that emerges from a toy telephone and fills a room. "Instead of doing it the way we did it in the first movie, which was basically one level of animation moving from right to left," Bruno observes, "we wanted the ectoplasm to move in and out. I divided the animation into multiple layers so that, by using Mark Vargo's expertise in optical work, instead of superimposing the ectoplasm onto the film, we matted it in layers. It was done exactly the way we did it in *Poltergeist,* except for the optical technique and the fact that it works dimensionally in the scene."

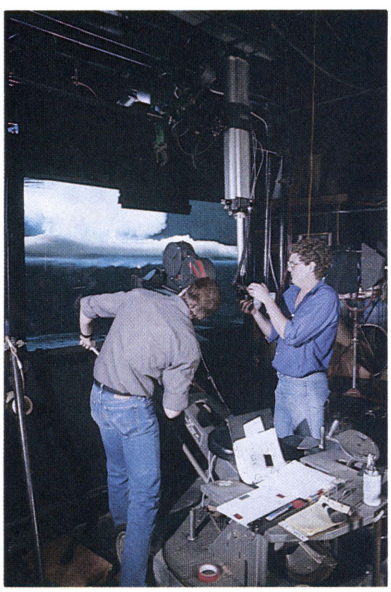
The addition of the noted Swiss surrealist painter, H.R. Giger, to the preproduction design team was both an exciting and terrifying prospect to the Boss Film team. Giger, who received an Academy Award for his brilliantly bizarre designs in *Alien,* was hired to create the look for the various stages of the great beast, a hellish apparition with which Steve Freeling must ultimately do battle in the astral dimension. "Somewhere during the time we were re-boarding things for Brian Gibson, we heard the H.R. Giger was engaged for certain creative contributions toward the design of the monsters," Edlund recalls. "Then we met with Giger, who flew over from Switzerland, and we talked to him about the faculties that the creatures should have. Giger worked primarily in Switzerland. I talked to him on the phone a couple of times, we had a couple of meetings over at MGM, and he sent his designs over from Europe. Since he is a fine art painter, we had to take those designs and "kinetify" them. Though we had come to an agreement that he was supplying conceptual material, it's difficult for any fine artist to put his work in somebody else's hands to execute. We had reached a certain point in our sculpting when we heard that Giger was on his way over, and that put me in a rather trepidatious frame of mind because I'd heard some stories about his work on *Alien* and how there'd been some trouble between him and Ridley Scott. I was a little worried about the situation because we didn't have time to go back and rework things if he said,

"Well, that's not my idea." When he did show up, he was very happy with what we had done, in fact, he was elated, so all that trepidation went to naught and we just went ahead full bore!"

Steve Johnson, Boss's creature design supervisor, was the man responsible for the final interpretation of Giger's designs, and he oversaw the sculpting, molding and articulation of the various stages of the great beast. Since he is a big fan of Giger's, Johnson was excited by the opportunity to work with one of his favorite artists, though he admits that when Giger arrived from Switzerland, "everyone was terrified." Part of Johnson's concern was based on the fact that in translating Giger's two dimensonsal designs to three dimensions, he had wanted to avoid the *Alien* look as much as possible. "We did a lot of research into fetal photography," Johnson says, "because what we were trying for, and what we achieved, was Giger's exterior look with different colors and a translucent quality. When the stuff is backlit, you can see veins, and we used warm tones, which I think added quite a bit, rather than the cold blues and grays of Giger's work. When Giger arrived at the shop, he was thrilled with our work and gave us the ultimate compliment when he said that he could tell right off the bat that we knew what we were doing, and he wasn't worried in the least bit that his stuff would come across. Even though he could see that in some ways, we were changing his designs, he felt we were improving them. Giger's work is really hard to get across because his paintings are so rough and intense, you have to sculpt it rough in three dimensions, which is something that doesn't come easily to an effects artist trained for film, where you're used to doing stuff that's photo-realistic. Giger's art doesn't work that way, and it was tough for me at first, so I sculpted a lot of stuff that was really quick and rough trying to recreate that look."

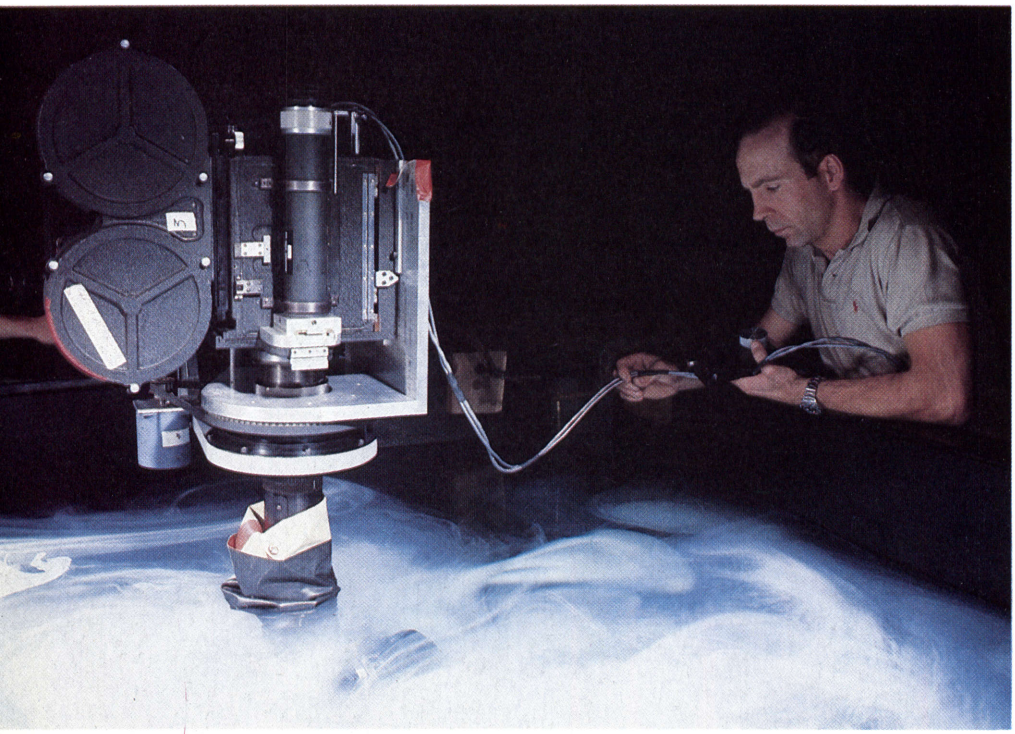
The evolution of the great beast promises to be one of the most startling and bizarre transformations ever recorded on film. The beast originates as a small but malevolent worm floating in a bottle of tequila which Steve Freeling drinks one night as he attempts to escape from the tension of living in a haunted house. Within moments after having swallowed the worm, it begins to expand inside Steve's body and he falls to the floor, retching. "The creature is actually regurgitated by Steve," Edlund explains, "and it quickly develops from a flopping embryo to a huge multi-headed beast with gigantic arms and claws that does battle with Steve in the hallway and later, in the astral dimension."





The astral dimension.* Below: *John Schreiber, right, and Waller in front of cloud tank.

The creation of the great beast through every stage of its transformation pushed the science of articulated rubber pieces to new heights, as Johnson and his crew combined traditional prosthetics, pneumatically controlled appendages, a half-scale rod puppet, and other state-of-the-art techniques to produce an awe inspiring cumulative effect. For the first stage of the transformation involving the disgorging of the worm, an inflatable balloon rubber worm was devised that appeared to grow as it was expelled. "We attached the balloon rubber worm to a dental plate in the actor's mouth so that when we inflated it, it wouldn't go down his throat," Johnson explains. "The inflatable worm was covered with a placenta-like substance on the outside, and we filled it with water so it had a weight to it. As it became fuller, it began forcing its way out of Steve's throat and not only extended, but grew in cir-



Pete Romano with submerged snorkel lens effects a motion control shot for the Astral Dimension.

cumference. Next, we switched the inflatable worm with one that grew to about three feet and fell out of Steve's mouth, and then we made another one that was worked by a drill motor underneath the stage floor so it could scurry across the floor under the bed. We then see it underneath the bed from the opposite side as it turns into the transformation baby, which is backlit and appears somewhat translucent."

For the next stage of the transformation, it was decided to build a very special, highly complex man-in-a-suit monster to be worn by Noble Craig, a paraplegic who had lost both legs and an arm in the Vietnam war. Despite this handicap, Craig has incredible fortitude and was able to move very acrobatically, which allowed Johnson and his crew the freedom to design a wildly bizarre costume, complete with air bladders inside the ribs making it appear to breathe. "We made a self-contained prosthetic for this weird kind of arm," Johnson adds, "which we applied where Noble didn't have an arm. We attached little flippers to his elbow so that when he moved his arm, it would activate the claws at the end of the suit's arm. We made a mechanical head for the close-up of his face working, which the director wanted to closely resemble Kane."

Next, Steve is attacked by the great beast's full sized hydraulic-powered arms, which bursts into the bedroom from out in the hall and slams him up against the ceiling. After he recovers from the attack, Steve ventures out into the hallway, where he sees the great beast for the first time. "We made a half-scale rod puppet, which was one of the most difficult things in the film, because it had to be really versatile and it had to be an actor," Johnson continues. "It had to do so many things, and it had a myriad of attachments. We used wires, rods, and a lot of appendages that were cable-activated, such as the hands and arms. It also had twelve intestine-like tentacles that sprouted from its head, and the body itself is like a weird scorpion tail that constantly twists and undulates. It's covered with a kind of placenta also, and it's made up of probably sixty tortured faces all blended together."

A number of additional effects were added after a rough cut of the film was assembled and MGM executives decided it needed a few more shocks. One of the more unusual of these was a transformation of little Carol Ann Freeling into a decomposing cadaver, a sequence designed by Steve Johnson and Screaming Mad George with the collaboration of Bill Neil. "The decomposing head of Carol Ann is really neat," Johnson comments. "It's a full sized motion control figure, which is something that I've been wanting to try since *Ghostbusters*. I wanted to marry the state-of-the-art transformation to the old time optical dissolve technique to bring it full circle. Basically, all it is is a mechanical figure that's programmed with a certain set of moves by Bill. Once it's set, you just push a button and it'll go through its entire move at exactly the same rate of speed and with the same movement each time. The thing was programmed to tilt its head, open its mouth, and open its eyes, and we just put a different skin on it each time we wanted it to change. We ended up doing four stages and we're possibly going to add a fifth, which is almost a fully skeletal head with no flesh on it at all. This technique gives us the leeway of having each figure composed identically, with the camera angle locked off through the whole move, and then we can take that footage and decide exactly where the right place to dissolve would be. Because it's such a quick shot, there will always be an overlapping image, so it'll be real smooth." Edlund elaborates: "Chris Regan then put an optical zoom on all the 65mm blue screen elements so that the whole shot has a built-in visual dynamic, made possible by our new ZAP (zoom aerial-image printer)." Besides shooting the Carol Ann decomposition, Bill Neil shot the miniature house sequences, the scenes involving the great beast rod puppet, and dozens of blue screen process shots that were incorporated into the film's most difficult effect, the journey to the "other side:" the astral dimension. "Since the final scenes were all effects that took

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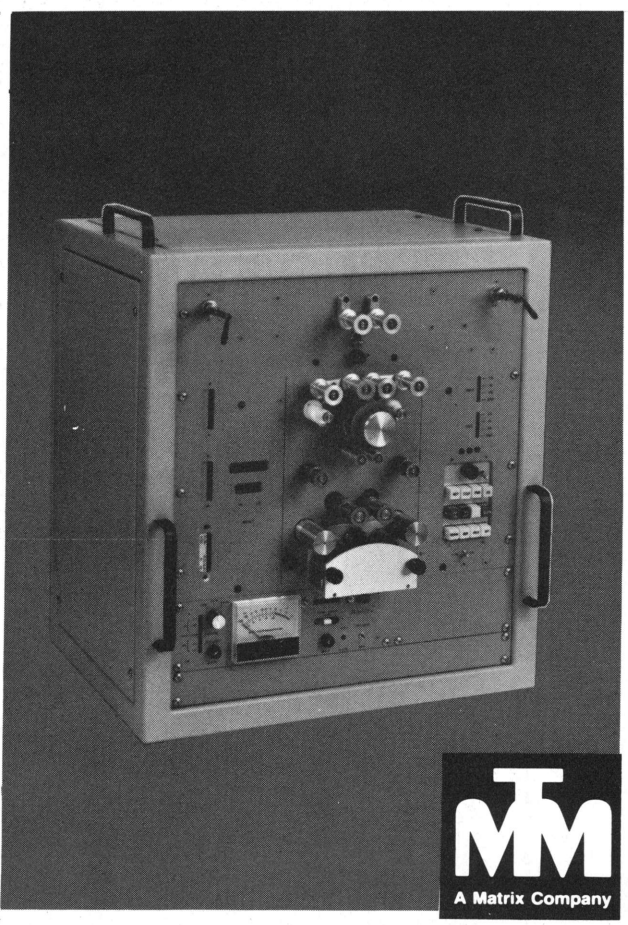

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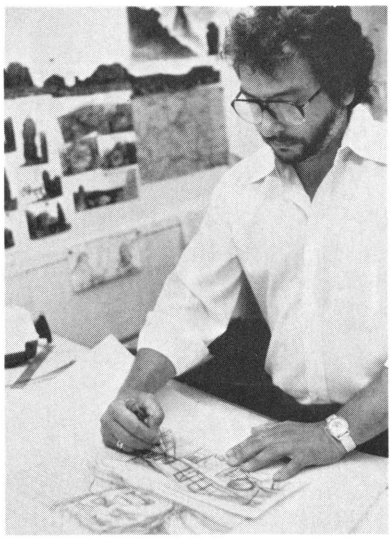


John Bruno, art director.

place in the astral plane," Neil recalls, "we had an agreement with the producers that we would shoot that material first, so we could have the longest lead time to work on it. We shot all of the blue screen astral sequence with the actors two weeks before principal photography began. Then, after the production was over, as they were cutting the film together, they decided they wanted to add some material, so we had a second blue screen shoot after photography ended. Finally, there was yet a third blue screen shoot scheduled with the actors." Edlund adds: "The post production scheduling had to be extended so we could "fix" the end of the movie."

"Since the film is called *Poltergeist II: The Other Side*," Edlund says, "we had to bring the audience into the environment of the astral plane, and, as it turned out, keep them in there for quite a while. I fought against making that sequence very long from the beginning of the picture, since my feeling is that when you subject an audience to something that you want to have a dynamic effect on them, you don't want to keep them in that situation for very long because then their senses get dulled to it. The worst example of staying in a situation like that for too long is in *Tron*, where the audience is supposed to find something of interest in a basically barren geometric environment."

"It was our job to figure out how the astral dimension could be brought to the screen, knowing the time and technical limitations of pulling that off," says Vargo, optical effects supervisor. "We could have done it with light or the absence of light, or with matte paintings, but we ended up using various interesting levels of cloud tank elements choreographed so that the dimension and scale of the family could be appropriately shown in an infinite void. The environment was not close and claustrophobic, but vast and everlasting. Some of the shots have as many as twenty elements, while others have just two. It spans the color range from dark blue and steely Giger-like grays to what we thought of as 'heavenlight': golden, white and pure. It was a very complicated sequence to pull off elegantly because we were dealing with such an intangible subjective realm."

Garry Waller, John Schreiber and Pete Romano began experimenting with a number of different cloud tank environments. In order to give more depth to the astral plane, it was decided to actually submerge the lens on a 65mm camera and fly it through the tank. "The astral dimension," Edlund explains, "was done using a very complex setup in the cloud tank with a 65mm camera mounted aboard an x-y-z motion control rig with a 40-inch deep snorkel that came down into the water. We had to build an underwater snorkel with a wide-angle bubble on it. Though we used this for a couple of shots in "2010," we perfected it further and we were able to get a very wide angle lens into the snorkel, and we were able to fly it around, move up and down, roll and pan the camera within the seven foot square tank. We used a lens with a 28mm focal length, which is extremely wide for the 65mm format. The astral dimension is not a psychedelic situation, it's relatively monochromatic in the bluish area, but there are subtle colors, and some interesting mauve tones in there. Garry Waller had a system of layering the tank with saltwater and fresh water to begin with, and then he would inject dye and pigment into the various layers to create a sort of three dimensional painting. Once the dye and pigment were in, Garry would wait until they settled out and got to a point where there was a certain amount of movement in them, and then the camera would roll a pre-programmed shot through the layers, and then Garry would empty the tank and go through the whole business again."

Because of the length of the astral dimension sequence, Edlund's crew not only had the burden of devising a constantly changing environment that would continuously excite an audience, they had to make each shot in the sequence flawless. "Since every shot had to be perfect," Edlund says, "matte lines and all of the traditional basic problems had to be virtually non-existent. Also, the family always had to have a consistent eyeline, because if you don't do that, the convergence of the eyes can be very subtle, and the audience will see them looking beyond the object they're supposed to be looking at. Everything had to be carefully handled – the balance, the diffusion and the treatment of aerial perspective – since it's a cloudlike, unearthly, and dimensional situation. There's probably fifty shots in the astral plane, where initially we had planned about fourteen. There's a lot of serendipity involved in this kind of situation, and we shot quite a bit of footage. Since the basic environment had lights and atmospheric effects built in, you have to make sure that when the lens is pointing toward the light, it's being shielded by material in the foreground so you don't get a flared image. We also added a number of sub-elements – wisps and plasmatic forms and shapes that would come whipping through the shots – so there's a relatively unpredictable and organic background and therefore, it remains always interesting." △

Supernatural Noises for *Poltergeist*

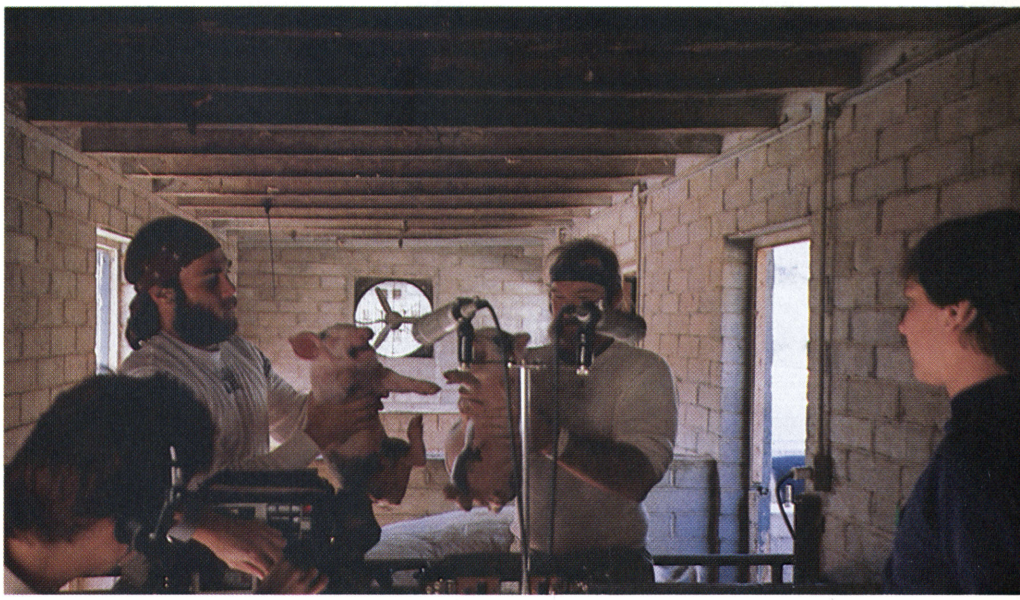
by Frank Serafine

Director Brian Gibson had definite ideas on creating the sounds for *Poltergeist II*. They had to be sounds that had never been heard before. My job was to create the supernatural audio style of the film as well as to add a living quality to each of the special visual effects.

Several group production meetings took place at Serafine FX studio with executive producer Freddie Fields, producers Mark Victor and Michael Grais and Gibson to analyze certain aspects of the film and to discuss style. We went through each frame of the film logging-in where specific sounds would be, plus deciding where off-stage sounds would be heard (After all you hear ghosts more than you see them.)

Interfacing with music composer Jerry Goldsmith was very important in determining the balance of sound effects with music that would be the most effective. Jerry had certain synthesizer sketches that he had done on a Yamaha DX7 and Passport MIDI 4 before his orchestral score dates. This gave us the time to hear what he had done, and to incorpoate the sound effects in the correct key, rhythm and texture. Once we had received the initial production input, sound gathering was needed.

In collaboration with supervising sound editor Bob Rutledge and sound editor Scott Hecker, my assistant Rick Schwartz and I sorted through enormous amounts of stock library effects as well as sounds already compiled from other shows. Bob had created production sketch tracks with vocal effects artist Frank Welker. We were able to use these tracks as a guide, and after blending the tracks with our own, achieved a multi-personality with the varying spirits. These sounds were transferred from 35 mag and ¼ inch to our PCM digital format by Bob's company, Blue Light Sound. Most of the sounds were transferred in stereo, except for the sounds that were specific or pin-pointed and were required to be mono to allow us to image the sound anywhere in the theater.



The digital sound storage system used in our studio consists of the Sony PCM F-1 digital processor, the Sony SLO-420 professional Beta interlocked with a BTX 4600 edit controller. SMPTE time code is recorded on the analog track of the video, with the digital audio recorded on the video tracks. Once the sound effects are recorded, they are striped with time code, logged and stored into our computer for categorizing and organization. Our library contains over 25,000 freshly recorded ditgital sound effects that can be accessed in a matter of seconds. The recording equipment in our studio consists of a Tascam M-16 24-channel console, a Tascam MS-16 multi-track recorder and an ATR-60 analog ¼inch recorder with SMPTE center track. These are controlled and synchronized by a BTX Shadow system that enables SMPTE-based control of audio recorder functions, accuracy down to 100th of a frame on punch-ins and punch-outs. Our signal processors include the Eventide SP-2016 and Harmonizer H-969, AudioDigital TC2, Audio & Design scramprack, Lexicon 224, Delta-Lab acoustic computer, DL 5 harmonizer and Y-expressor. Our synthesizers consist of Emulator's Emu II plus, Emu I and SP-12, Yamaha's DX7 and TX7, KORG's 8000, Casio's 5000, a MOOG synth (surprisingly one of our most useful units) and a Prophet 5, all of which are controlled through MIDI (Musical Instrument Digital Interface.)

Photos by Ilona L. Karme

Rick Schwartz, left, using portable Sony PCMF-1 digital processor with Scott Heckler, right, recording baby pig squeals. **Below:** ***Serafine on location, records lion roars.***

MIDI is a computer port installed on all synthesizers: a standard

Serafine at work in studio.

created by the electronic music manufacturers to enable any or all of the various keyboards to communicate data. It is used as an intelligent interface between computer and synthesizer. The MIDI sequencer has made it possible to create an entirely different kind of recording studio. The computer-based sequencer "remembers" what you play and assigns this data to a track in the sequencer. You can lay down multiple tracks, and on playback can send this data to multiple slaved keyboards. This produces the same effect as multi-track recording the keyboards with a traditional recorder. Some of the more immediate advantages to the MIDI are its first generation sound quality and its zero fidelity loss in digital bouncing, since computer data is being transferred instead of sound. The evolution of MIDI has made the synthesizer an amazing tool for supplying sound effects for motion pictures.

The Apple IIe is our controlling computer, with all the synthesizers interfaced through the JL Cooper MSP 16/20 MIDI switchbox. We use the Emu II plus as our master keyboard; it produces sound by digitizing and storing external live signals, such as a line source or a microphone. The Emu II plus has a powerful MIDI sequencer with extensive editing capabilities, and has 34 seconds of memory. It allows for the cueing of sounds with such ease of operation never before encountered. It has a built-in SMPTE reader/generator that conforms to the synchronization standard of the professional film, video and recording industries. The implications for the creative expansion for sound effects are enormous when coupled with SMPTE synchronization. All of the sounds we have compiled in our digital library are sampled into our Emu II plus. This allows us the freedom of easy access and the ability to manipulate and perform sound effects directly in sync with the picture. Once a sound is sampled into the Emu II plus it can be time-compressed, stretched, bent, turned backwards, pitch shifted, given a doppler effect, filtered, edited and looped.

Many of the specific sounds sampled into the Emu II plus for *Poltergiest II* were recorded fresh in the field using a portable Sony PCM F-1 digital tape recorder, with PZM, RE-20 microphones and ACO test mics. Such locations as pig farms and wildlife preserves were needed to capture the types of sounds we were looking to use. Animal growls, attacks and mating sounds (the stranger the better) were required to fulfill the demands of an ever changing and transforming "beast". We also sampled many other pre-recorded sounds to blend and enhance our sound.

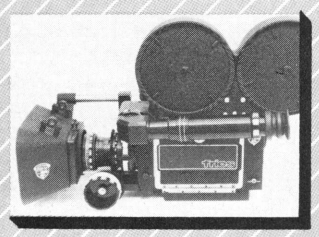
For the opening scene, much experimentation was done with different types of winds, synthesizer whisps and Indian bullwhips for characterizing the Indian spirits that envelope Taylor (Will Sampson). These elements support the special visuals literally, but the nature of the scene needed the addition of a soulful quality. I researched different Indian chants (Hopi and Navajo) to help support the reality of the supernatural Indian spirits. These spirits were "good" spirits, and needed a friendly almost inviting sound blended with the other elements. The same Indian spirit composite was used throughout the picture in varying degrees as a supportive element and to add a continuity to the audio style of the film.

The "worm beast", however, was probably the greatest individual sound challenge of the film. The evolution of this beast needed continuity from its birth through to its death. In the birthing stage, the beast was comprised aurally of the noise from a dentist's suction tube, which gave a rather organic torturing sound needed for the initial shock of its first appearance out of Stephen's (Craig Nelson) mouth. As the beast progressed, some of Frank Welker's ADR tracks were introduced as it was spinning through the air and squirming on the floor. We decided at this point to leave a brief period of silence as it was under the bed to add a touch of suspense.

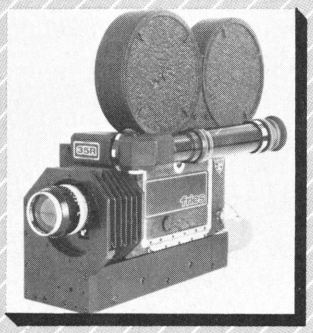
As the bed was thrown and the beast reappeared, we gave the scene an unusual sexual nature by using strange breathing, jello effects and camel slobber. Later, as the beast grew into the hallway, tracks were created by Brian and me recording ourselves cursing and sampling our dialogue directly into the Emu II plus. This sequence required over 30 floppy discs, and over 150 sound effect units to create the final dub.

Moog synthesizer wind blended with vocal elements were used as the bathroom doors closed to set up the "braces" scene. Bob Rutledge had recorded several foley tracks of wires being pulled through teeth which were then sampled on the Emu II plus and played in clusters (similar to playing eight different tracks in real time). We digitally recorded different gauges of wires and cable as they were spun

MODERNIZED EQUIPMENT FOR MODERNISTIC FILMAKERS

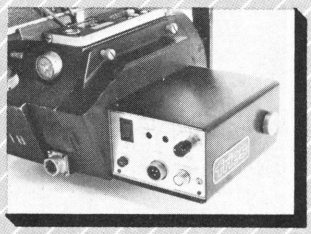


35R Beamsplitter reflex conversion to the Mitchell Std./ High Speed camera. Features include interchangeable lensmounts, film clip viewing, orientable viewfinder, video assist, high-speed/crystal/ single-frame motor.



AF35R Follow focus beamsplitter reflex conversion to the Mitchell Std./High Speed camera for computerized motion control. Features include 4" bellows focus travel, lead screw drive, internal capping shutter, choice of lensmounts, orientable viewfinder, film clip viewing, video assist, and high speed/ crystal/single frame motors.

35R3 Rotary mirror reflex conversion to the Mitchell Std./ High Speed camera. Features include interchangeable Arri, BNC-R and Nikon lensmounts, orientable viewfinder, video assist, and a high-speed/crystal motor.



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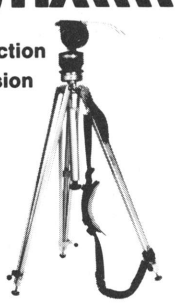

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through the air at high speeds, and added these to existing elements. This gave us the dense metallic sound needed to audibly illustrate the thousands of strands of wires wrapping around Robbie (Oliver Robbins). But to provoke fear in the audience, a dentist's drill was blended to these tracks to subliminally touch the subconscious.

This led directly into a scene we call the "chair spirit" scene. As Stephen sits down to relax from the braces attack, he is blasted from the chair by Kane's spirit. Since there were no special visual effects, the scene had to be carried completely by sound. Tracks were blended from sounds I had recorded at Lockheed Aerospace Center—wind tunnels—air that blasted at 100 tons of air per second. This combined with a hydraulic air compression release and more Moog elements created the appropriate force for the blast from the chair. A doppler gong was used for the spirit's subsequent rise, but not before it was processed through a delay reverb and an "endless room" program on the Eventide SP-2016. This last process created a transparent sound which was pitch-shifted up as the spirit rose and moved.

In an earlier scene, Carol Ann (Heather O'Rourke) was cornered by toys that come alive and was laser-zapped by a talking robot. For the robot we auditioned many different voices (Julian Beck's, Frank Welker's, etc.) We decided, however, to go with a speech synthesizer, DecTalk made by Digital Equipment Corp. Unlike other text-to-speech products, DecTalk allows the user the ability to custom design an original voice, with control over large vocal parameters. This range includes many different personalities which can talk at the same time and even sing songs! We were able to program the DecTalk to speak in the same key as Jerry Goldsmith's score, to retain continuity. The laser zap was again a Moog effect, and to create impact as the spirits entered the room we used low end thuds. Sparkling elements performed on the Yamaha DX7 were added to raise the intensity of the scene as well as give it a hypnotic feeling.

The "astral world" scene at the film's end was considered to be, in effect, its own movie. Many of the special visual effects had not arrived until very late in the post-production stage. Those last days became long pressured hours trying to finish before the deadline. Team work on behalf of everyone involved was needed to get the last two reels done in two weeks. Over 100 units of sound FX were manufactured at Serafine FX as well as more units of foley, ADR and effects from Blue Light Sound. With these gathered together we were ready for the final dub.

The sound dubbing was done at the Cary Grant theater at MGM using a Westec quad eight console, with Mike Kohut, dialog mixer; Carlos Delarios, effects mixer; and Aaron Roshin, music mixer. Much of the dialog, as when Diane (JoBeth Williams) and Carol Ann are sucked into the astral world, was processed on the stage with the Eventide SP-2016 and H-969. The astral wind and freed spirit effects were processed on these units and programmed by Rick Schwartz. The effects were so heavily processed that I simply guided the sound with my voice and the processors took it from there, acting almost like a synthesizer.

To set the ambience of the cave, Carlos processed whale sounds in a long deep reverb which proved to be quite eerie. Mike Kohut processed the voice of the Diane & Carol Ann in the interior of the cave with the Lexicon 224 XL. Once the basic sound was created, we spun the sound around the theater speakers with a joystick to give the sensation of voices traveling in another dimension, psycho-acoustically. These processors together with the Emu II plus were often used on the stage for last minute touch ups, which saved the time of creating the effects in my studio, transferring and editing to mag during the pressured time schedule. In the end it worked beautifully.

with the advancements available to us in film sound, *Poltergiest II* offered us the ultimate opportunity: to enhance the ever-increasing visual demands of such motion pictures today, to expand creativity and to innovate the tools of sound technology. △

Serafine FX is in Santa Monica. Star Trek I was the author's first-credit and he has added many others since then.

Three-Perf in the Future?

by Rune Ericson

A normal wide screen 35mm print contains unnecessary waste. Of the useable image, 30% is black. In this instance black is not beautiful, merely expensive – astronomically so, as elementary school arithmetic can confirm.

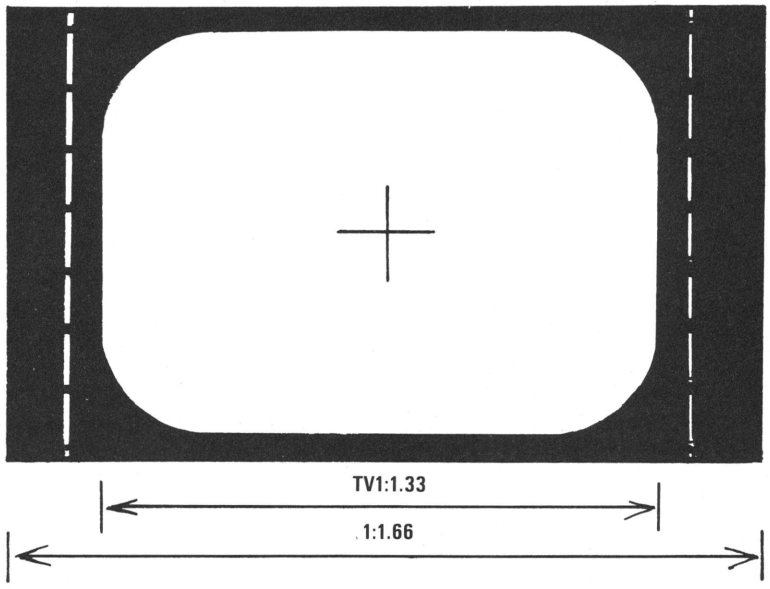
The annual consumption of 35mm negative stock is around 300 million meters (984 million feet), and billions of feet of positive film. If the overall year's consumption, including processing were reduced by 25%, the annual savings would exceed $400 million. It's hard to believe, but it's true.

On the wide screen format, film has approximately a 30% black frame line. By advancing the frame three perfs per frame on each pulldown instead of the standard four perfs, the frame line is reduced to 1.5mm without affecting the size or dimensions of the picture area.

Though revolutionary, this innovation is not exactly new. The Russians toyed with the idea some 20 years ago. In Mascelli's 1972 Cine Workbook positive references are made to 3-perf. Linwood Dunn worked on 3-perf at Film Effects of Hollywood. Anton Wilson referred to this idea in 1975, and Miklos Lente of Toronto continued it in 1976, but nothing came ot it. The time wasn't ripe. But today the situation is completely different and I venture to say: *there is no longer any need for the Academy aperture.*

It is time to consider seriously a global transition from the 4-perf to the 3-perf pulldown system – a stage by stage process over a period of five to 10 years. The practical disadvantages are minimal. This unorthodox view will be clarified, but first let's take a closer look at the present format vis-a-vis future formats and see how it would fit into a 35mm production utilizing the 3-perf pulldown system.

Wide Screen: When shooting normal wide screen productions (1:1.66 or 1:1.85) there would be no practical drawbacks; overall circumstances would remain the same.



TV shows produced in 3-perf would utilize only the middle section of 1:1.66 or 1:1.85 formats for present systems, keeping wider version on tap for future HDTV use.

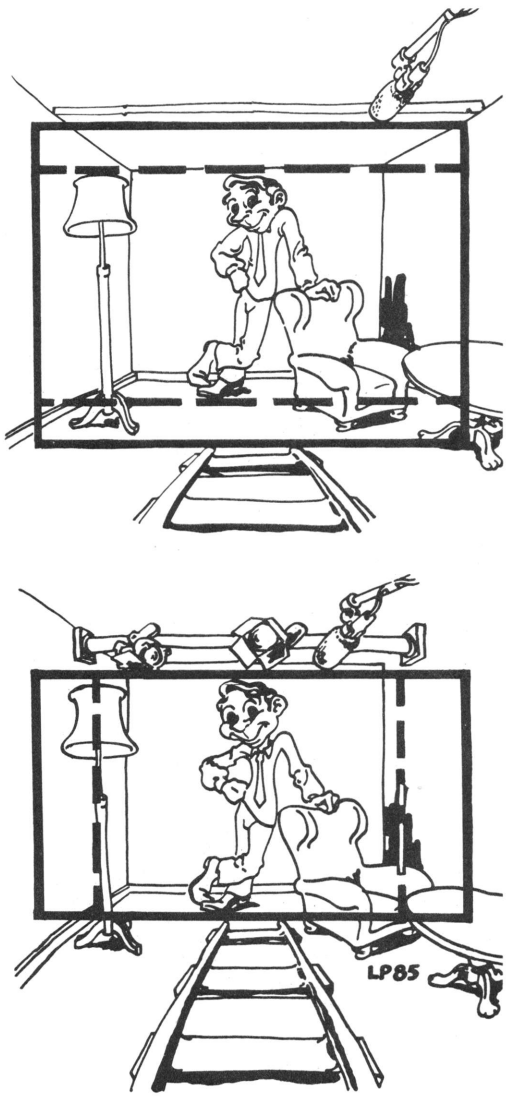
Cinemascope/System 35: It is probable that Cinemascope photography will graduaully give way to the new System 35 (or Super Techniscope, or whatever). With system 35, ordinary spherical lenses are used. The width of the picture frame extends across the film from perf to perf; while the height of the frame is somewhat less than three perfs. From the original negative (which is not anamorphic), the optical printer produces an anamorphic intermediate negative for release printing. It's also possible to make direct blow-ups from System 35 to 70mm prints, due to the increased quality of raw stock, which, in recent years has attained extremely fine grain.

The camera lenses could be, for example, Panavision, Technovision, Ultrascope, etc., but none of these are comparable with the most common spherical lenses, especially with apertures wide open. Nor is their depth of field of equal caliber. Anamorphic lenses are bulky and expensive. They are doomed to gradual extinction, which is no great loss inasmuch as the System 35 will successively take over without the 3-perf pulldown posing any problems.

Super 1:85. Just introduced by Clairmont Camera, this system also produces an original negative for wide screen 1:1.85 productions. This gives a 41% larger original negative for reduction to wide screen intermediate, which, in turn, gives better quality when shooting on normal 1:1.85. Super 1:85 matches the 3-perf pulldown perfectly. The width of the frame line is identical to that of the present CinemaScope negative, which is quite adequate for good splices.

TV-Video: In Scandinavia and practically all other European countries, features are shot on wide screen 1:66 format. There are only two variations for showing these features on TV:

1. Show the entire width of the film, but with a black and white



Above: ***Necessity of keeping area above and below wide screen area clear for TV use creates problems with placement of lighting units, dolly tracks and microphones when using Academy aperture.*** **Below:** ***Wide screen format in 3-perf, with TV format achieved merely by cropping sides, makes closer placement of overhead lighting and mikes possible and simplifies placement of tracks and other objects on floor.***

strip on both the top and botton of the screen.

2. Enlarge the center of the picture area when scanning, and both ends of the frame are automatically lopped off.

This sounds worse than it is! Actually, it works out exceedingly well if the procedure is planned in advance by marking the dimensions on the ground glass. This system worked beautifully when I shot *Charlotte Lowenskjold,* a Swedish feature co-production of Swedish TV and an independent production company. Neither producer was willing to compromise on the format. No visual discrepancies would be accepted by either with regard to their respective forms of distribution. The "enlarged center area" technique satisfied both their needs and proved to be a pleasant surprise to me.

If TV productions such as *Dallas* were produced on the 3-perf system, only the mid-section of the 1:1.66 (or, better yet, Super 1:1.85) wide screen format would be utilized, following the principle used in shooting *Charlotte Lowenskjold.*

Even though the exposed area is slightly smaller, the enormously advanced raw stock available today offer a margin of quality more than sufficient for the present 525-625 TV systems. Moreover, you get a perfect picture, free of charge, for future HDTV.

The 3-perf system is capable of taking care of all the alternatives that exist not only today and next year but also the realities of the decade of 1990–2000 – realities that can be calculated in terms of $400 million per year. I am also convinched that by the time the 21st Century rolls around the 4:3 format will gradually disappear and wide screen TV films will be shown in our homes. It wouldn't be surprising if the home TV screen is then 75 x 125 cm and hanging on the wall.

An examination of American feature film production reveals that even greater concessions have to be made between the wide screen and TV format. The Academy aperture plate in the camera has a 1:1.33 ratio. Both the Academy and the wide screen formats are clearly marked on the ground glass. Normally, the cameraman favors the wide screen when framing his shot. However, he keeps the space above and below the action clear for TV release. This means that additional set ceilings have to be constructed. Another problem is lighting. It is virtually impossible to place light directly above the wide screen area, as we in Europe can do, when filming on location. The difficulty of avoiding dolly tracks, etc., on the lower margin and microphones on the upper (resulting in deterioration of the sound), costs a great deal of money – money which we tend to forget about after the production is completed.

Another serious drawback of the Academy aperture compromise is an artistic one. When the cameraman frames for a wide screen intimate close shot, one senses its nearness in the cinema screening room. But on the small TV screen, upon which the close shot *should* appear closer, the opposite occurs; it actually appears wider, with distracting margins of air above and below. When the 3-perf system is instituted in America, the commonly used European technique will have to be applied.

That $400 million per year saving is, of course, an abstract sum. When calculating the budget on an average film, one could reckon on a 25% saving on the cost of raw stock, processing, rushes, and in future release printing.

How to start a 3-perf system?

Camera aperture plates should be applicable for full frame as well as standard screen format with their respective ground glasses. One important point is that it should be possible to re-center the lens mount 1.42mm to obtain correct optical axes for both formats. This system has worked perfectly in the Aaton 16mm cameras ever since they were reset to Super 16/Standard 16 many years ago. It would be relatively simple to redesign cameras to the three perf system and equally easy to reconstruct our present cameras to the system if manufacturers supply the necessary parts.

Processing and rush-prints can be carried out at laboratories with no technical changes whatsoever. However, existing optical printers would have to be equipped with the three perf movement in order to do opticals for CRIs or 4-perf masters for release printing. A complementary idea would be a step printer for direct blowup from 3 to 4-perf release prints with optical sound.

Debrie, in Paris, would be willing to construct these for roughly $110,000, a price that would be quite attractive to small countries whose normal needs rarely exceed 10 to 20 copies. The printer can also be utilized for 4-perf rush prints during the period of transition to the 3-perf editing.

When the 2-perf Techniscope process was in use, Steenbeck and other manufacturers supplied an exchangeable module to their tables. They will do the same for 3-perf.

The answer to the obvious question, "Wouldn't it be simpler to make a contact print and have the three perfs in the cinema?" is an unequivocal *yes*. This is the goal toward which we strive. All cinema projectors are equipped with only three sprocket wheels with which to transport film. The upper and lower sprocket wheels each have 32 teeth (eight frames). The Maltese cross has 16 teeth (four frames). By simply making them exchangeable to two 24-tooth sprocket wheels and one 12-tooth wheel, the projectionist would be able to change from 3-perf to 4-perf prints and back.

Three-perf prints will be 25% cheaper, 25% shorter, 25% lighter, and will save 25% in freight charges while retaining the same viewing time and picture area. In addition, negative rolls will last 25% longer in the camera, resulting in reduced reloading, shorter short-ends and a camera that runs more silently.

Although sound will be 25% slower with 3-perf prints, this will have (according to experts) very little influence upon the quality of the sound. By the time 3-perf release prints are in fashion, all minor sound discrepancies will have been resolved.

The suggestion that Super 35 could, in the near future, be shot perf-to-perf in 1:2.35 (CinemaScope ratio), 1:1.85 (and 1:1.66) for release prints processed without sound, is not as foolish as it may seem. Remember, the first motion picture sound was produced from large disk records. Why not give it another try – with sophistication?

One method would be to have the Aaton SMPTE time code flag on the running edge of the film, outside the perforations. Here, each frame can store up to 80 computer bits. Within a second, this code can synchronize a single laser disk with digital stereo sound, the quality of which is impossible to attain with known optical methods. This system would enable the sound to synchronize automatically, despite the fact that the print may have frames missing or that the projectionist may load the reels in the wrong order.

There are other advantages. A print can be used for more than one language version as well as dubbed and original sound. The code on the film edge can even command projected subtitles.

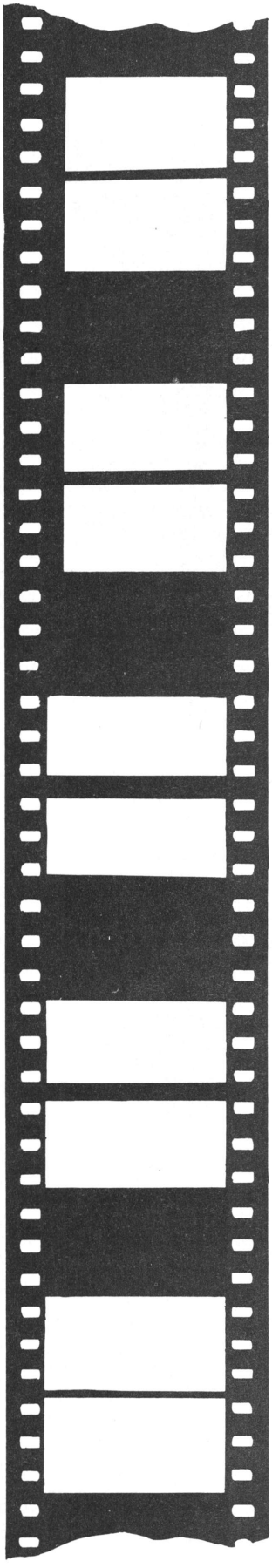
All this may seem complicated and far out, if not impossible, to achieve, but is it? Think of some of the transitions of the past: from 78 rpm to LP records, from black and white to color TV, and from normal to wide screen in the cinemas of the world. All required considerable sums of money to get started.

Laboratories and raw stock manufacturers will, likely, consider themselves losers if the 3-perf system is inititated. They couldn't be more mistaken. Less expensive productions offer greater competition to video and TV, which leads in turn to ever increasing feature film production and, subsequently, more work for everyone.

We needn't look very far into the future to see that HDTV is well on its way. To meet this challenge, we must adapt film to HDTV's demands, taking into consideration that we may be faced with other financial drawbacks. Apparently, HDTV will have an internal frequency of 60HZ, which means that the correct film camera speed will have to be 30 fps. This would automatically escalate the film cost by 25% when shooting in four perf 35mm. If we shoot three perf at 30 fps, however it would still be 6% less expensive than shooting four perf at 24 fps. It's quite possible that in the future it will be a *must* to shoot all features at 30 fps. This would increase projection quality by minimizing flicker, strobing, etc.

I've had 3-perf on my mind for a number of years, talking to myself about it incessantly. Based on the facts I have been able to assemble from a wide range of highly knowledgeable sources, I've come to the conclusion that the only logical alternative available for future 35mm film productions is the 3-perf system. It covers all types of aperture ratios for screening in cinemas as well as TV systems, both present and future.

So let me propose that all of us – cameramen, technicians, and economists from every corner of the globe who believe in the future of film in all its aspects – join forces and work together with a universal three perf system. For myself, I have a very optimistic program for the immediate future:



A large variety of formats is practical in 3-perf.

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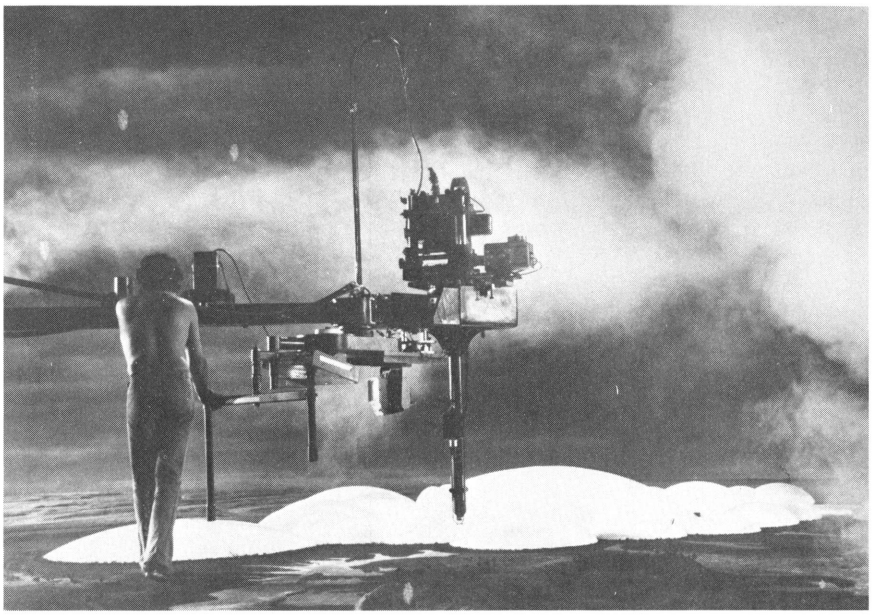

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The late L. B. "Bill" Abbott, ASC, originated many of the illusions that made movie special effects plausible. He began when the movie business was young, was long-time chief of special effects at 20th Century-Fox, and completed a brilliant career in the '80s. His legacy is this book, which tells how a flying saucer was landed in the heart of Washington, D.C.; Paul Newman and Robert Redford leapt 80 feet into a rocky creek; the world's tallest building was destroyed; Raquel Welch took an odyssey through a man's bloodstream; James Mason almost was devoured by a giant lizard; the luxury liner Poseidon was turned upside down; Rex Harrison rode a giant moth to the moon; and much, much more.

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I plan to start my next feature in 3-perf, hopefully with both Panaflex and Aaton 35 cameras, each equipped with Aaton time code. Around 200 scenes will be shot aboard an eight meter sailing boat, often under sail. The extremely small Aaton 35 with its 400-foot magazines, will make a neat and handy package to have along for these scenes. Loaded with 3-perf film, each magazine will store enough film to cover 5.30 minutes of shooting. The Panaflex with its 1000-foot magazine will be able to store 14 minutes of film.

Film Technik in Stockholm, one of the most modern film laboratories in Europe, under the management of Bengt Orhall, FSMPTE, plans to modify the necessary equipment for converting to three perf. He will reconstruct a lab projector for controlling three perf prints, and convert a reduction printer for 16mm rushes from three perf. All editing and sound work will be done on 16mm. (In Sweden, the practice of reducing 35mm to 16mm work prints for editing purposes is commonplace). This method saves us a great deal of money.

(Note: At press time, word was received that test shots for this film, *The Pirates,* had been completed and actual production began May 12. Panavision converted two Golden Panaflex cameras and two optical printers have been converted to three perf.—Ed.)

Three-perf probably will be a long, drawn out story. My sincere wish is that this article will set the ball rolling . . . △

Rune Ericson, who has been working as a director of photography for some 40 years, shot his 50th feature film during the summer of 1985. He was a founder of the Swedish Society of Cinematographers and was president during its first eight years. He managed Film Labor (a professional film lab) for five years. He welcomes correspondence regarding three perf. Address: Film AB Rune Ericson, Huvudstagatan 12, S 171 58, Solna, Sweden.

The Japanese Method for *Ran*

by Bob Fisher

Some scenes only nature can paint, and few directors understand that better than Akira Kurosawa as he waited patiently for the weather to change on the slopes of Mt. Fuji. He was making *Ran,* an epoch movie set in feudal Japan documenting a tragic struggle for power between an aging warlord and his three sons.

The warlord, or great lord, as he is called, has spent his lifetime stitching together an empire stretching over vast plains framed by snowcapped mountains. The story begins when the great lord unexpectedly announces that he will retire with only a small entourage, and he appoints his oldest son as his successor, ordering the others to swear fealty.

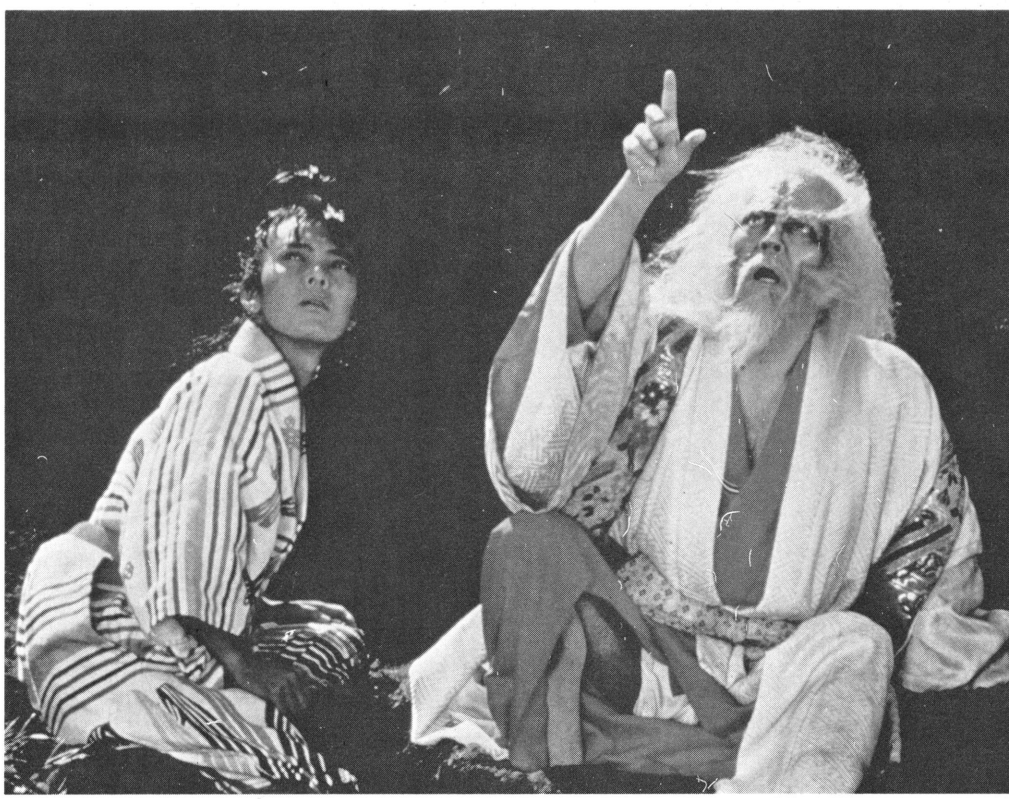
Discord results almost immediately, and the fabric which the great lord has spent his lifetime weaving begins to unravel. It very quickly becomes evident that there is a severe price to pay for the crimes that he has committed in his lust for power.

Ran is the first made-in Japan feature film in the 58-year history of the Academy Awards to earn an Oscar nomination for cinematography. (In 1970, three Japanese cinematographers shared an Oscar nomination with Charles Wheeler, ASC, for *Tora Tora Tora.*)

Critics have compared *Ran* to Shakespeare's *King Lear.* There are obvious similarities in story and motivation of characters. However, as a motion picture, *Ran* is distinctly Kurosawa's visualization of a story which he obviously saw with great clarity in his own mind before the first frame of film was exposed.

In this context, Kurosawa has said, "To create is to remember."

There were times during production when Kurosawa stoically meditated while waiting to shoot a complex battle scene involving hundreds of extras, including considerable action involving cavalry. He was waiting for nature to provide the background that promised to match his vision of the setting for a pivotal scene.



Characterization aided by dramatic camera focus.

Sometimes the window of opportunity was very small, and it took a dedicated as well as disciplined cast and crew to respond. In those situations, it is said that Kurosawa could shoot seven battle scenes in the time that it might take another director to film a poker game. Kurosawa was also uncompromising in his attention to the smallest details that contributed to the overall illusion.

If that required reshooting a scene, which was almost perfect, no quarter was given. In that sense, *Ran* was filmed one frame at a time. "We had some 200 very precise drawings before shooting started, 100 for the hell scene alone," says lead cameraman Takao Saito, JSC.

The drawings, which Kurosawa continued to produce throughout the filming process, were very specific right down to actors' expressions and the subtlest of colors. The cameramen's tasks were to translate the illusion which Kurosawa had envisioned when the drawings were made, and to film as faithfully as possible.

Notice that we said cameramen—plural. Three cameramen participated in the filming of *Ran*; Saito, Asakazu Nakai, JSC, and Shoji Ueda, JSC. As the letters following their names indicate, all are members of the Japanese Society of Cinematographers,

Japanese films are noted for oriental pageantry.

and Nakai is a past director of the organization.

This is not an atypical situation, especially in the case of Kurosawa, who has used multiple cameras in production ever since he directed the last half of *The Seven Samurai* in 1954. According to Saito, who has frequently worked with Kurosawa during this period, the purpose is to secure enough coverage from various angles and focal lengths to cleanly and effectively link action during the editing process.

There is an interesting contrast here to Western filmmaking methodology. During the production of *Ran,* as is the case with all of Kurosawa's work during the past 20 years, the three photographers each had responsibility for a specific camera.

They worked both as colleagues and in a teacher-student relationship with each other, and with Kurosawa, as they have for many years. Kurosawa emerged as a director some 40 years ago, and he created more than 30 films during this period. Nakai, who, like Kurosawa is 75 years old, did his first film with the director in 1946—*Waga Seishun ni Kui Nashi.*

In all, he has been cinematographer for 10 of Kurosawa's films, including *Ikiru* (1952), *Seven Samurai* and *Dersu Uzala* (1975). Nakai has also worked on various other famous features, including Tadashi Imai's *Aoi Sanmyaku* (1949) and Kimisaburo Yoshimura's *Itsuwareru Seiso* (1950). The Mainichi Film Concours awarded Nakai the Cinematography Prize for *Norainu* (1949) and *Aoi Sanmyaku.* He has also received the Japan Film Technique Award for *Ikiru* and *The Seven Samurai,* and the Film World Special Prize for *Itsuwareru Seiso.*

Saito started his career as an assistant to Nakai on Kurosawa's film *Subarashiki Nichiyobi,* in 1947, when he was 28 years old. He was the "B" cameraman on *Ikimono no Kiroku* in 1955. Saito advanced to main cameraman in 1962, when he photographed *Sanjuro Tsubaki* with Kurosawa.

Ran is his sixth feature film with Kurosawa as main cameraman. The others were *Heaven and Hell* (1963), *Redbeard* (1965), *Dodeskaden* (1970) and *Kagemusha* (1980). *Sanjuro Tsubaki* won an award for cinematography at the Asian Film Festival, and *Heaven and Hell* won the best cinematography award from the Hokkaido newspaper.

Ueda started his career when he was 23 years old, working as an assistant to Saito on *Sanjuro Tsubaki,* and other films. He was the "B" cameraman on *Kagemusha.*

Ueda was the "B" cameraman for *Ran,* and Nakai was the "C" cameraman and backup. The juxtaposition of cameras varied depending upon the scene and situation. Sometimes they were set up at wide distances in order to cover scenes from different visual perspectives. Other times, three cameras were tightly clustered focusing on different aspects of a scene, or looking at the action through different focal lengths.

Typically, Saito was responsible for the overall scene, Ueda for actors' movements, and Nakai for expressions. Another example would be the filming of the battle scene between the armies of the second and third oldest sons. Saito's camera was set up on a nine-metre-high platform overlooking the meadow where the battle scene was filmed. He covered the entire battle with a 55mm lens.

Ueda's camera was on a slightly lower platform, seven metres high, but in the same position. The cameraman focused on the third son's force through a 150mm lens. Meanwhile, Nakai's camera was set up in a forest 500 meters from camera "A," and it was used to cover the two sons' armies with a 100mm lens.

Saito was involved informally (which means not under contract) in preproduction planning stages for *Ran* while he was working on *Kagemusha.* Location scouting began during the autumn of 1982. Saito was responsible for site location and shooting tests.

"At first, we decided on Hokkaido as the main location, which was the same site as *Kagemusha,*" says Saito. However, various difficulties emerged, including an inability to get permission to shoot in the large field used for *Kagemusha,* a lack of a sufficient number of available horses in the area, and a decision by Kurosawa that the mountains and rivers in the Hokkaido location weren't ideal for the settings he envisioned.

Further research revealed that Kyushu would be a more appropriate main location for all of the above reasons. In addition, Himeji and Kumamoto castles, both historic sites,

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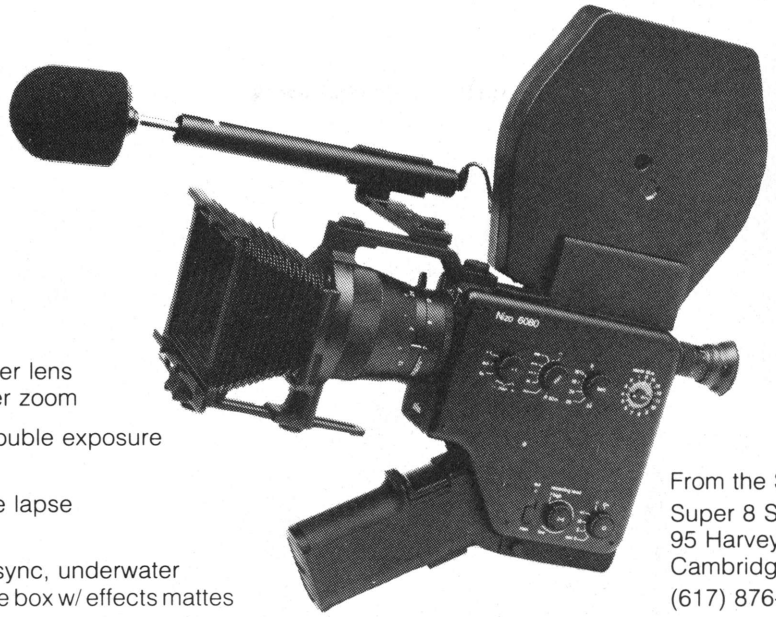

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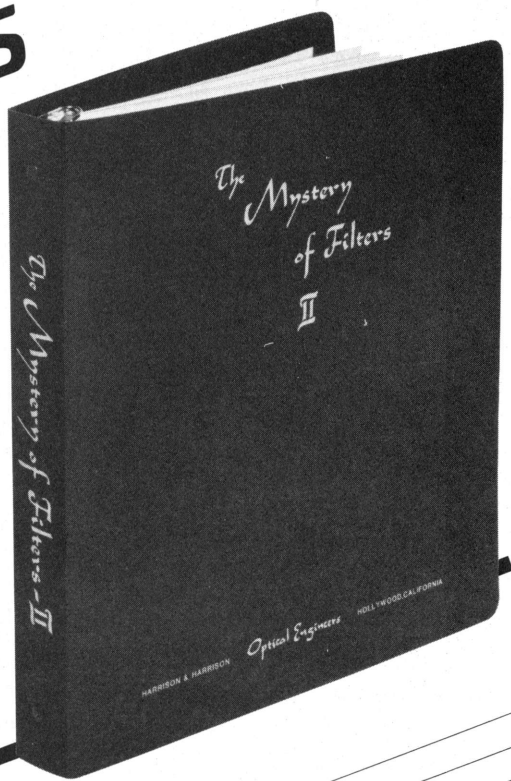

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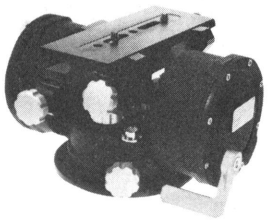

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provided ideal settings both as exterior backdrops and for selected interiors. A third castle was constructed to meet specific production objectives.

Ueda began working on *Ran* in February, 1983, and Nakai joined the production team in May 1984 when shooting actually started.

Three Panaflex Gold cameras were used mainly with 25mm to 250mm zoom lenses. The cameras were each equipped with a Panavision electric spray deflector, a device which is fitted on the front of the lens to prevent rain or other water drops from splashing on the glass.

"Mr. Kurosawa does not like wide-angle lenses," says Saito. He also avoids zooming, though zoom lenses are on the cameras most of the time. Instead, the zoom lenses are generally locked down at a specific focal length, very often 75mm.

Then, why use zoom lenses?

"To assure very precise color balancing," Saito replies. The use of color is very important in developing the visual style of *Ran,* and Kurosawa wanted to avoid any possibility of subtle variations which could result from using various focal-length lenses.

Other production tools included a Mitchell Mark II camera, which was used primarily for slow-motion work, 400, 600, 800 and 1000mm lenses, and a combination of arc and HMI lighting elements.

Around 100,000 feet of Eastman color negative film 5247 and Eastman color high speed negative film 5294 were used for original photography with the latter employed for interiors and night work.

Except in those situations where very subtle exposure decisions were required, the three cameramen left it to their assistant to handle and coordinate exposure calculations to assure that footage from the cameras could be easily intercut.

Saito says that Kurosawa always uses Eastman color negative film because of its consistency in processing, ease of handling during editing, and the comparative stability of colors and images during storage.

Processing was handled by Imagica, in Tokyo, (formerly Toyo Genzo Sho) by the same person who did color timing for *Kagemusha.* Saito notes that was important because the timer had become very familiar with the visual intentions of Kurosawa and his cameramen.

"We were very careful to avoid color balancing deviations between the three cameras, yet this was unavoidable because of the use of smoke and the presence of fog in some scenes," he says. "Imagica was very helpful in these cases."

Saito continues, "As regards color and compositions we were guided by Mr. Kurosawa's sketches . . . [he] divided the three brothers into yellow, red and blue camps, and devised special costumes based on color schemes found in *Noh.* We tried to be faithful to these colors, and also tried to preserve the true qualities of the subjects—the textures of their hair and clothing, etc. We meddled very little with the colors, but we sometimes used colored reflectors for character delineation."

In addition to the sketches, the cameras were always present during rehearsals, so the three crews were able to easily and quickly adjust to any changes in movement.

As for photographic style, Saito says, "Mr. Kurosawa and I [both] dislike special camera techniques . . . Fundamentally, the camera is not a player; it is there to record all that ought to be recorded and nothing more. I tried to photograph scenes so that they were easy to watch and understand."

Because of the nature of the story, Saito adds, there are many scenes where characters are photographed either full body or waist up.

As much as *Ran* is a story about the people, including the great lord, his sons, and others affected by their interactions, it is also a story about the land. Kurosawa's direction and the photography gives audiences an intimate feeling for both.

On the Oscar nomination, Saito comments: "We are extremely pleased just to be nominated, for we never even expected that to happen. I think it is because we were fortunate enough to have a good story, and also to have had a very cooperative staff . . . I would like [this] to be a step to the future." △

Electronic Characterization

by George Turner

Unique is the word for *Tony de Peltrie,* a short film from Quebec which blazes new trails in a matter of only seven minutes and fifty seconds.

The 35mm picture was created by four independent filmmakers – Pierre Lachapelle, Philippe Bergeron, Pierre Robidoux and Daniel Langlois. The project was initiated in 1982 and premiered at the Siggraph '85 Film & Video Show in San Francisco. It was produced with the aid of TAARNA, a powerful computer graphics system conceived for artists and designers. Developed at the Centre de Calcul de l'Université de Montreal, TAARNA has been used in numerous computer graphics projects.

What makes *Tony de Peltrie* different is its pioneering technique of animating three-dimensional characters entirely by computer. It portrays, through the eyes of a pianist whose career is on the down swing, the last moments of a musical era. Tony, alone and beset with nostalgia, recreates in his own way one special, unforgettable evening in his life, then crumbles into oblivion.

During a recent visit to Hollywood, Philippe Bergeron told how *Tony* came to be:

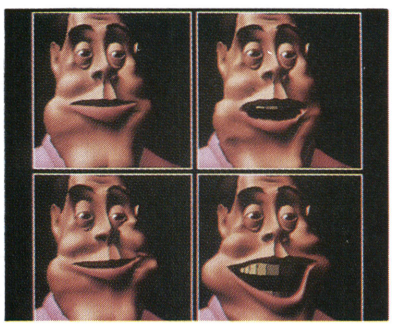
"The first step was taken in July 1982 by Pierre Lachapelle who, in association with the University of Montreal and the National Film Board of Canada, started a computer graphics research group which was mainly involved in three dimensional character animation," Bergeron recalled. "I joined with him in February 1983, and later Pierre Robidoux and Daniel Langlois joined. Lachapelle and I had previous experience in the making of *Dream Flight,* which was done with wire frame techniques. You can see through the objects, whereas Tony is made up of solid, opaque forms." (*Dream Flight* was the subject of an article by Bergeron in *American* Cinematographer for August/September 1984).

In a complex montage sequence, Tony is haunted by the ghostly faces of friends from past audiences.

"*Tony* was three years in the making, including two years dedicated to developing the system, which is now available for making new films, and one year on the picture itself," Bergeron revealed. "We knew we'd have a computer character even before the screen play was done, so Daniel made sketches well in advance, and then sculpted Tony in clay."

Grids were drawn onto the surfaces of the sculpted models, and these lines were described by the computer. "We built every part – a large model of the face, and separate models of the eyelids, ear, hand, thumb and finger," Bergeron explained. "We photographed them from the front and back, and left and right, to create the x, y and z coordinates. Each part of the body had a different scale. We used TAARNA to make correspondences between different scales and then to build the body interactively. Once the parts were digitized, we had to assemble them, putting the ear on the head, the head on the shoulders, the arms on the body."

For the body movements, stick figure animation was sufficient. TAARNA is equipped to map in flesh over the skeleton and adjust to the shape of the 3-D model of Tony. Five commands were incorporated to make the figure twist, bend, pivot, etc. From the commands, key positions were created for the skeleton at selected frames. A curved space interpolation algorithm, developed by Doris Kochanek at the National Film Board, was utilized to insert transitional skeleton movements in the intermediate frames. The algorithm both defines key positions of objects and lighting mathematically and, using parametric techniques, controls and adjusts the shape of the interpolation curve. The animator is able to adjust the interpolation path through application of tension, which controls



Above: ***A large clay model of Tony's face by Daniel Langlois was used to generate the coordinates.*** **Right:** ***A few of the expressions achieved through sophisticated computerized imagery.***

how tightly a curve is made between two points of time and space; continuity, which controls smoothness or kinks; and bias, which allows the animator to exaggerate movements.

"To give Tony some real facial expressions, we put a grid on the face of a real human being – an actress – and asked her to perform 20 different facial expressions," Bergeron said. "We digitized the grid of each expression. By making a correspondence between the grid of the actress and the grid of the model we were able to have the model take on the expressions of a human face. Due to Tony's big chin and unusual features, it was difficult to do. We'd find that, say, grid no. 57 of the human corresponds to grid no. 104 on the model. After a while we could take expression no. 6 of the human being and have Tony do it. We created a data base of 20 different expressions for Tony himself, same as of the actress.

"Sometimes one part of the human corresponded to several parts of Tony. Sometimes we had to take wild guesses. Sometimes if the actress opened her mouth too much it would alter Tony in a very bad way, so we'd have to take, say, 50% of the human expression. Once you've established the data base of 20, you can create new expressions – like, 70% of a smile and 20% of a sad face. By creating combinations, out of 20 you can get hundreds. Eight or nine expressions have to do with talking, the forming of language, so it permits lip-sync. More coordinates are needed for the neutral expression of the clay model than for each human expression. If you take the mathematical difference between the human smile and the neutral expression of the model, you now have the smile on Tony."

The making of the film proceeded in four steps: character animation, choreography, special effects animation, and art direction. Controlling lighting was basically the same as it would be on a real stage. "You say to the computer, 'I'd like to have a light of a certain color and a certain place,' and it gives it to you," Bergeron said. "It also gives you the exact shadows."

The additional elements – the piano keyboard, the death masks of vanished friends who visit Tony during his reverie, the gleaming wooden floor, and the startling ending wherein Tony disintegrates into wisps of dust – were all accomplished separately using mathematical animation techniques and grid manipulation. Even the piano was digitized. A Gradicon digitizer (Instronics, Ltd.) was used to analyze and enter coordinates for the various props.

Two separate Cyber computers from Control Data Corp. were used. The creation and development were done with a Cyber 835, which drew the first frame and checked every 24th frame thereafter in low resolution. Animation files were then transferred to a Cyber 855 for high resolution calculation of the frames. During the several days the 855 computer was calculating frames, the 835 was being utilized in the development of another scene. Forty tapes were necessary to store the animation for the complete picture.

The final film was shot at the University of Montreal using a RASTER Technologies 1/255 24-planes screen display. An Oxberry 35mm animation camera was used in the filming, which required about 20 working days.

The four artist-technicians who created *Tony* were united only for this production. As Bergeron noted, "We all have different visions." Lachapelle now heads a new company in Montreal, Emotion Studios, in association with Robidoux and Langlois. Bergeron is now research technical director for Digital Productions in Hollywood. According to Bergeron, "TAARNA was created by Pierre Lachapelle, who also was producer and creative director. I did the character animation and choreography. The special effects animation and construction of props were by Pierre Robidoux. Daniel Langlois was art director and character designer. All four of us co-directed. Marie Bastien did the music."

Tony has won a string of major awards internationally and received acclaim from the press. *Time* reported that "In striking contrast to the awkward, robot-like characters in earlier computer films, De Peltrie looks and acts human; his fingers and facial expressions are soft, lifelike and wonder-

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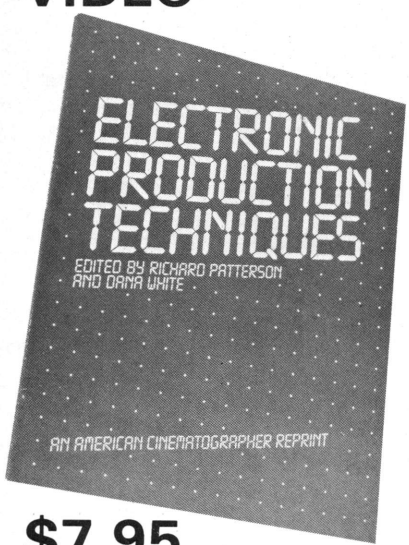

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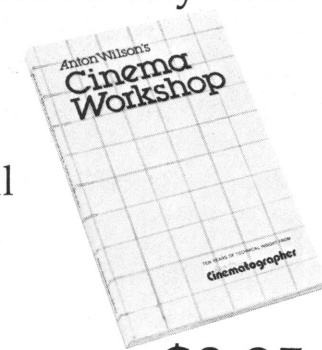

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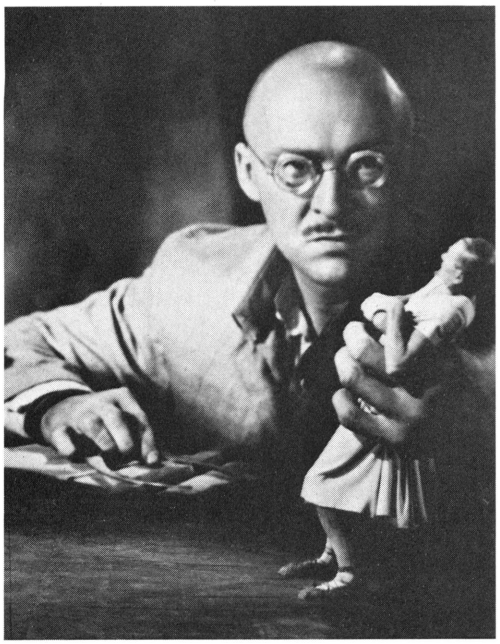

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fully appealing. In creating De Peltrie the Montreal team may have achieved a breakthrough: a digitized character with whom a human audience can identify."

"The film cost about $1.5 million (U.S.) including the image calculations donated by the University of Montreal," Bergeron said. "Those calculations are now available to filmmakers without the necessity of research. Much of the time we worked around the clock in 12-hour shifts in order to finish in time to premiere *Tony* at Siggraph." Although Bergeron is the first to admit that the picture could hardly be considered cost-efficient in a commercial sense, he believes that it will repay its cost many times over as a breakthrough in computer character animation.

"It was a necessary first step," Bergeron stated. "There are flaws. Tony is somewhat awkward and a little too perfect; he doesn't have the human flaws that normal people do. His shirt is glued to his body. The hardest problem in computer animation is to simulate irregularities such as those in hair and clothes."

Bergeron expressed great faith in the growing importance of computerized animation in mainstream production:

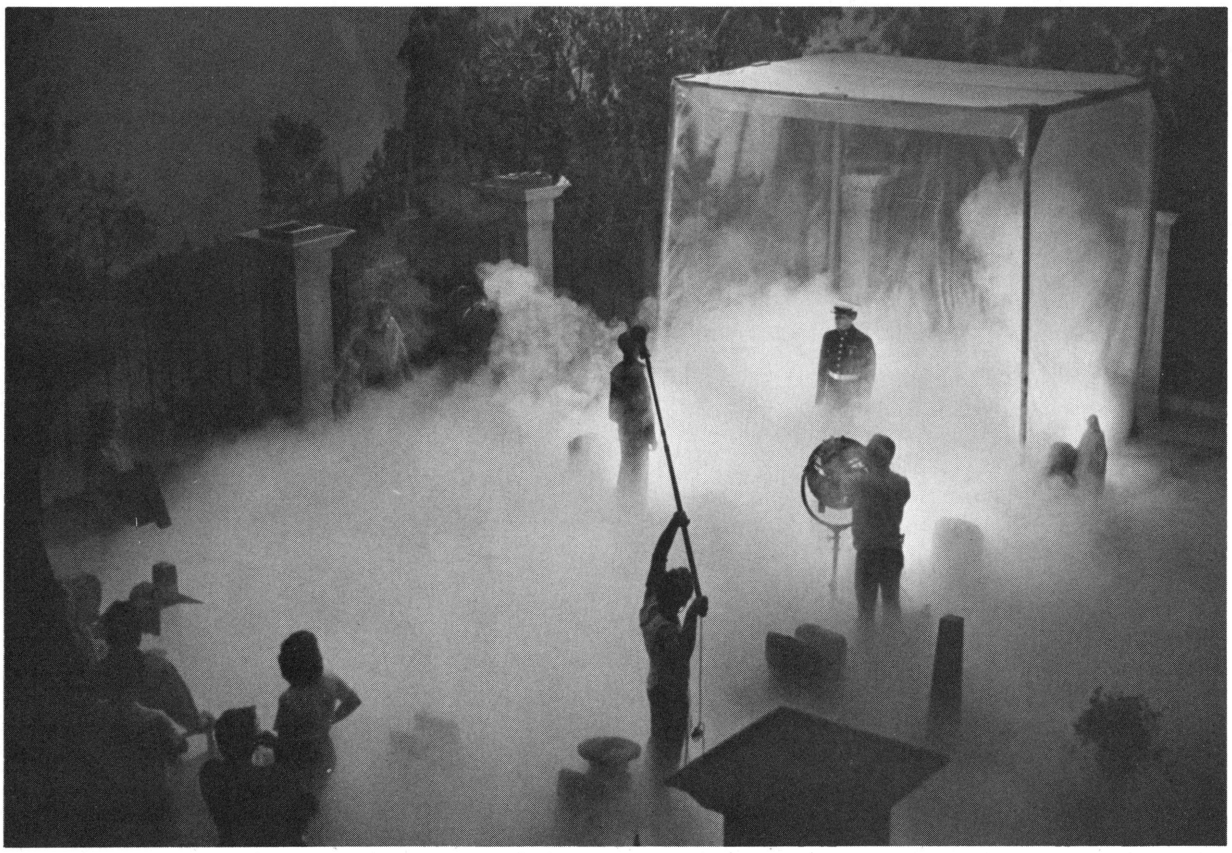
"We still have a lot of work to do. Now we must go beyond to better acting, conflicts between characters and even ad spots using character animation. The public at large isn't at all impressed by this kind of animation unless it tells a story.

"There must be the development of stronger personalities and the creation of a bank of different characters audiences will relate to as strongly as to living actors. We will be able to create more subtle animation, conflicts and situations involving computer generated actors. There will be live actors interacting with computer generated actors and the emergence of feature films starring computer generated actors. This cast of characters can go from picture to picture, just as other film stars do. Several companies today are working toward this idea." △

Tony de Peltrie *was produced in both French and English speaking editions. The English version is distributed by Expanded Entertainment, 2222 S. Barrington, Los Angeles 90046.*

Bringing Life to *Twilight Zone*

by James Van Hise



Graveyard scene from "Paladin of the Lost Hour"

When the new *Twilight Zone* premiered in September 1985, cinematographer Bradford May had already been working on the show for nearly a year.

May had previously worked for Phil DeGuere (producer of *The Twilight Zone*) as director of photography on *Simon & Simon.* "That was the first show of my career," states May, "and I did 35 episodes over two years. Then I went over and did a season of *Dallas* because I wanted to learn to light women and that was the best place to do that."

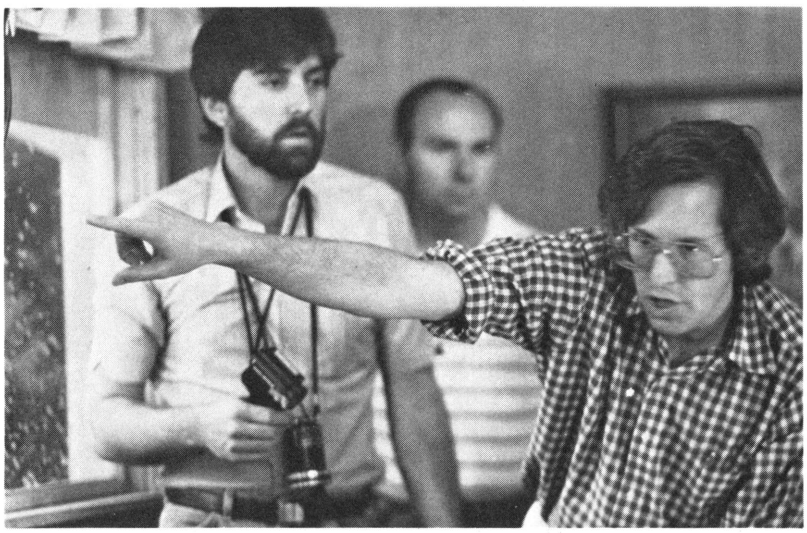
Following *Dallas,* May photographed movies-of-the-week as well as the short-lived series *Otherworld.* He was working on a movie-of-the-week, *Brotherly Love,* for CBS Entertainment when he was approached to work on *The Twilight Zone.*

"I was also offered Steven Spielberg's *Amazing Stories* but I chose *Twilight Zone* because I was the sole cameraman. *Amazing* was alternating cameramen and I like to be in charge of all of it as far as the visuals are concerned. I think I made a wise choice because *Twilight Zone* is very well mounted and I scrutinize it very closely. It's a good hour of television and it's different every week."

While on the set of such episodes as "Wong's Lost and Found Emporium," it was clear that May was very involved with setting up shots, talking with the actors about where they should stand and turn within the shot and other duties normally reserved for the director. But he's the first to admit that this is not at all common for a director of photography.

"No, but I have a real knack for it. I've directed several episodes of *Twilight Zone* as well as shot them at the same time. So I served as both director and director of photography on those episodes. Plus I feel that I have a little hand in most of the direction of all the episodes because I am so tight in the series. I kind of feel that we run the show down here on the set.

"I like to think of myself as a working cameraman," May continues. "I know a lot about production because of being 17 years in the business. I came up as an assistant and an operator and I have a family that's involved in the grip end of this business. I try to



Above: ***Barrett Oliver in "Gramma" segment.*** **Right:** ***May at left with William Friedkin on set of "Nightcrawlers."***

be helpful with the actors because they come and go so often. We don't work with the same two actors week in and week out so I like to make them feel comfortable by letting them know that I'm there watching for those things that actors won't see, possibly because of nerves or because of looking towards the acting and other things. So yes, I'm very involved in laying out the shots and staging actors. I do that day in and day out for all of the directors and all of the actors that are on *The Twilight Zone.*

"I make myself the common element in each show and I draw to that and people draw to me. It's a nice little package – it really is. I don't think it's common, though. I think that a lot of cameramen are visual people or lighting people and they're basically there to get the job done. Once you get out into other projects, like feature pictures, there's not many guys running around that put as much into it. I care a lot about it and I'm young enough now where I can put out that kind of energy. But I think that it's something that will stay with me for as long as I'm in the business because it's a love for making movies, overall, and I do it well and enjoy it."

But this doesn't mean that as director of photography May will overlook whether or not the director wants all of the help he's willing to give.

"When the directors come in and they feel that they have a handle on what they're doing, I'll lay back to a point and wait for them to want me to help them. But of course I'm still in there fighting for things that I feel are right and which would make the show more appealing to the public overall."

Because of his strong involvement with each episode, May was able to step in and direct the *Twilight Zone* segment "Gramma" (based on a story by Stephen King with the screenplay by Harlan Ellison) when director William Friedkin (who directed the popular "Nightcrawlers" segment of TZ) had to bow out at the last minute.

"The sets were already laid out to his specifications. But I think the only thing we used that Friedkin would have done was the camera-remote system. He didn't know how it was going to work on a television schedule because the schedule is tight and you have to have timing brought together with five different people – the actor, three people on the system and then the operator. The camera-remote system is a camera which is manned by a video center off the set. It gives you a 360 degree circumference.

"I took over that segment on a Thursday night and started shooting Monday morning, so I only had the weekend to prep it for myself."

"Gramma" was Bradford May's first work as a director and, although it was a great deal of work for him, he feels it worked out pretty well. "I call myself a great enhancer because once a director gives me an idea, I can usually play off that and make it work. But when you are both director and cinematographer, there is no kickback and you certainly have a lot more work to do. 'Gramma' was the first thing that I ever directed. I got my DGA card at that time and it makes me happy to know that CBS wanted me to direct more. I enjoyed it very much but I don't know if I'd want to do it on a daily basis. It takes quite a bit out of you – it takes everything you have to give."

Another thing that May brought to the episodes of *Twilight Zone* that he worked on was a special approach to lighting, one in which he strove to have each episode look unique. This use of a lot of ambient light as opposed to spots and string lights wreaked havoc in post-production when the film was transferred to tape for editing. Generally it's at that point

that the editor plays with the lighting, but on the shows Bradford May did, that was almost impossible.

"I like to employ what I call real lighting," May explains. "I don't like to throw a lot of false illumination on people to gain exposure. I believe that sets should be lit practically and look real. I don't think that we want to see nine shadows going across the back wall when there's a window on the other side of the actor and the light should be coming from the window. That's what you call furniture lighting or three-camera show lighting. I think that a lot of television is lit that way because of time and speed. It's just easier. But when you care, you can't go fast. It takes longer. I'm very fortunate in that I can still go fast and achieve a nice look. We have employed more practical lighting on *Twilight Zone* than I've ever been able to employ on any other television series because of the fact that the sets are so elaborate at times and we change every day. So I try to make my sets look real and not put that kind of light on them which is just exposure. This gets back to my whole theory of feature lighting, but even sometimes in features I see lighting I don't like. I think I pioneered low-key lighting for episodic television because most people don't shoot the way I do for television and most directors can attest to that.

"Because of my eye (eye being a look for photographics), one thing I've been very fortunate to be able to do is to read the scripts and then decide exactly what I feel that show should look like. Of course that may change with the location that I'm thrown into, or with the actors or the director. But I usually have a pretty good visual sense of what I want to do on each particular project.

"I think one thing we've been able to do with *Twilight Zone* is to have them all look different and have a different style. They almost look like they were shot by a different cameraman as well as having a different director. What I fought for more than anything is not to be so standardized in the so-called television lighting in that we could bring in feature film techniques and lighting employment. People look at television a little more carefully than they did before. They are beginning to understand what good film is and what good film looks like."

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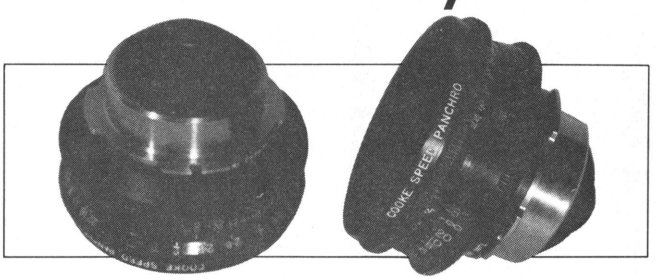

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In order to maximize the effects he wants to achieve on set, May works very closely with the set designers. "In this situation I think that the cameraman, art director and set designer have to work very closely together."

At the time May worked on *The Twilight Zone* (he finally left to pursue a feature after more than half of the season's episodes were shot), he felt that the important difference between *Zone* and *Amazing Stories* was the use of more than one director of photography on the series.

Recent strides in fast film have allowed May to reach much further in his stylized lighting than he would have been able to a decade before.

"Yes, there's no question about it. I employ fast negative whenever I'm shooting on the stage or doing night interiors. I use Eastman Kodak 5247 and I rate it at about 500 ASA and it keeps the grain down. I use 5247 when I'm exterior and certainly the employment of faster lenses from Panavision allow me to do more. A lot of other people in the industry have those tools that are out there for them but they don't put them to real use. I like to really push the film to the max and see what you can get out of it because when you work in those low light levels, you pick up a lot of what I call 'ambient light' or natural light which becomes exposure that you don't get when you're putting a lot of light on people.

"But overall I think it's the balance, what you do light and what you don't. I think it's highs and lows – whether you get a three-dimensional looking picture on television. Then I think you've achieved a good look. I hate to look at television and see one overall light – that's what you see so much today unless you go to a feature picture. One overall light is so one-dimensional so I try to build three-dimensions into the lighting, and so far, thank God, we've been successful in doing it."

So far all of May's work has been on film, and that's the way he wants to keep it. Unlike some, he doesn't see videotape as being much of a breakthrough when it comes to putting a story on the screen.

"I don't think that tape looks real enough, or perhaps it looks almost too real. Whenever I watch something on tape, I feel that I'm watching a sporting event. It has a different kind of look, although a lot of people can't see that look, I know. Film, to me, will always be. I don't think you'll ever go to Westwood and see a tape movie. The film-to-tape transfer which you see in television today is helpful because of time limitations and effect limitations. I'm more of a film guy. I'm just not into tape, but it's wonderful for sporting events."

Like May oberved, tape is helpful in editing and post-production, which is where he also spent a lot of time with his *Twilight Zone* work.

"I spend five hours, usually, per hour of show over at Image Transform color-correcting and timing the density on all of the shows. It's a lot of time that I put in which is free time. I don't charge the production for that. It's something that I believe in. It's not worth having a baby and letting somebody else raise it. Working in television for so long, I have found that if you merely shoot the film, it's not enough. You've got to watch it right through that last bit of post-production, duping and then you've got to go down and finish your product. I've even gone as far as going down to the network and transferring film to tape so that they could air the tape and I wouldn't get screwed up in there. It's a lot of time out of my life, but if I'm going to put this much into it on the set, then I've got to carry it through the timing. That, I think is the most important."

Overall, May found his work on the demanding anthology format of *Twilight Zone* to be very exciting, certainly more so than on a regular series where little changes from week to week.

"For myself and my whole crew, I think that has kept us *unbored* and searching for new things because of the scripts changing all the time. We never went into a set more than once. We knew that the anthology would be, for me as director of photography, the most visual thing that I could do for television, so I was quite happy about it." △

James Van Hise is a California writer for Starlog magazine and other film-related publications.

Producing One-Person Show

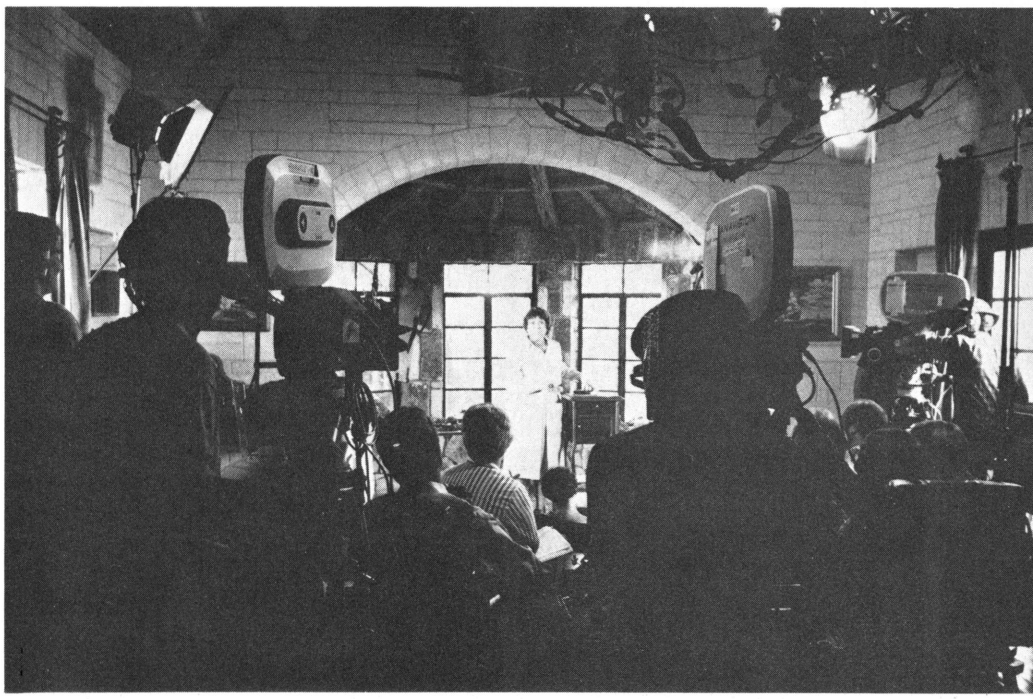
by Randy Rennert

When "I Love Lucy" was first broadcast over the airwaves in the 1950's, it was one of the first television shows to originate on film. With "Lucy," the technologies of film and television began to overlap. Of course, the two separate mediums were intended to be used two separate ways. Film was used in the world of cinema, while television was used for live broadcasting of entertainment, news, and sports. It was simple and clear cut. There were film people and there were television people, and there was no cross-pollinization of the two.

But starting with "I Love Lucy," film people began to produce television programming. Suddenly, the TV world was being invaded by the film populace. And as the years passed, both television and film technology evolved, making the mediums more economical, efficient, and portable.

"Travel Tips From a Reluctant Traveler" is a production originating on film but shot in the traditional television style, using a three camera set-up. The workprint edit was done on ½" videotape, but the final release format was back on film. The entire production was unique, combining the latest in film, video, and computer technology in order to achieve a quality, cost-efficient product. Three new 16mm Panaflex cameras were used, as well as the advanced Nagra IV SMPTE TC recorder. But the post-production process is what really made the project different. The FTF (Film-Tape-Film) process allows you to shoot on film, work-print edit on videotape, and release back on film.

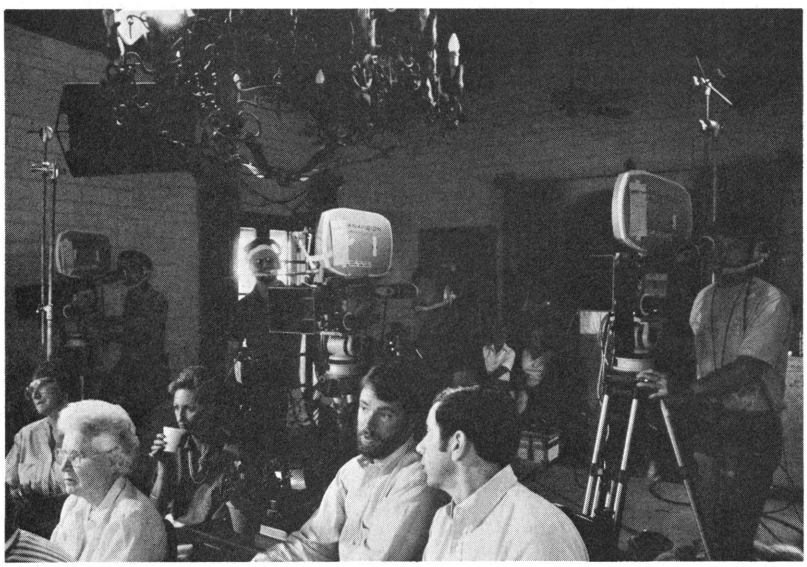
Despite these overlaps of technology, the battle lines still exist and today, there is film and there is video, the offspring of television. We think of video as giving us the sense of immediacy, while film gives us the sense of "once upon a time." The electronic medium versus the chemical medium, and still today, there are those who feel that it's either film, or it's video, or its nothing. But by combining the technologies and styles of the respective mediums, it becomes apparent that these technologies are here for us to benefit from, and not to fear.



Jeannette George lectures before audience and three 16mm cameras.

White Lion Pictograph is an independent production company based in San Antonio, Texas. In their productions, Christian related themes are prevalent, with many of their productions distributed to the church 16mm and video market. Past projects have included an award winning children's series, documentary and dramatic films, as well as a music video. Like all independent producers, money (specifically, the lack of it) is everything. So any system that allows a savings in time and money is a welcome addition. But, as director Jim Robinson explains, "White Lion's reputation with the audience lies with creativity. The audience expects a unique look, not the usual product." Thus, creating a quality product in a cost-efficient manner became the cornerstone of the project, "Travel Tips From a Reluctant Traveler."

"Travel Tips" is a four-part series for the church market that is, for the most part, a one-woman show, utilizing the storytelling talents of actress, speaker, and playwright, Jeannette Clift George. Jeanette has been called "an intellectual trapped inside an actress' body," and her humorous style of speaking captivates her audience. Her message is a simple one: The Christian life is a journey, and sometimes a difficult one, but we can all make the trip. Often, such preachings can become boring and monotonous, but Jeannette's ability to take ordinary, everyday circumstances and turn them into a spiritual allegory is what left a lasting



Above: ***Robinson views action from control room while Mike Taylor checks video assist.*** **Right:** ***From left: Mike Smith, Rusty Steubing, Daryl Studebaker and Bill Molina get instructions for next shot.***

impression on the audience and the crew.

This "speaker on film" type of production has become increasingly popular with organizations since the cost of bringing in a noted speaker can be prohibitive for many groups. But more often than not, the production values for these types of films have been fairly dismal. Usually, the speaker lectures before a hundred or more people in an auditorium and is captured on videotape.

It must be pointed out that in "Travel Tips," the show is 99% Jeannette and 1% style and technique. Robinson explains, "The goal is to create an ideal situation in which Jeannette can work and communicate." So, Jeannette and the crew traveled to the MO-Ranch near Hunt, Texas, located in the heart of the scenic Texas Hill Country. An antique-filled living room in an old hunting lodge turned out to be the ideal setting. Jeannette was placed at the end of the room where three large windows gave a view of the vast green countryside of south central Texas. The warm, intimate situation that was desired was made complete with the addition of a small audience.

The setting demanded the use of film. The large windows gave a strong backlight that would have played havoc with video. Additionally, in dealing with a woman, a hard edge was to be avoided. And with the comfort of the audience and Jeannette a consideration, the light levels were relatively low and diffused. Thus, Kodak 7291 was used, and it performed well.

Over the next two days, Jeannette was going to speak for nearly 30 minutes at each of her four sessions. With three cameras running simultaneously, budget and time demanded one take of each show. Placed in the confines of a small room and with a continuous take of about 25 minutes, a top-of-the-line, quiet, professional 16mm camera was needed. Fortunately, the people at Panavision came up with a camera that met all the qualifications.

"Travel Tips" used three of the new Panavision 16mm Panaflex cameras. Because of the growing use of 16mm in the professional market, Bob Dunn of Panavision explains that "they wanted to give top line professionals a professional camera." Mike Smith, director of photography, says, "if you've worked with the 35mm Panaflex, you'll feel very comfortable with the 16mm Panaflex." And, Smith echoes Dunn's remark in saying, "it's a high quality, comfortable, studio-type of camera."

Aside from the high quality camera equipment Panavision supplied, the strong points of the 16mm Panaflex provided were essential for this project. First of all, the 1200 ft. magazine load provided over 30 minutes of filming time at 24 fps. This allowed all three cameras to shoot Jeannette telling her stories in one take, without changing mags. Essentially, this kept Jeannette's rhythm and energy level constant and undisturbed. Second, the quietness of the camera is reported at being less than 22 db with film running. In a quiet room where the soundman can pick up old bones creaking, a quiet camera (actually three quiet cameras) is indispensable.

While Jeannette was lit for film, the three camera setup looked strikingly similar to a television set. To enhance the effect even more, two of the cameras were on Elemack dollies, giving them the mobility a television camera is afforded. The third reason the Panaflex was essential to this production was the sophisticated, built-in

video assist. Video assist cables were run out of the cameras and into three video monitors located in the control room (an adjoining room located across the hall). The director communicated with the cameramen, the dolly grips, and the assistant director via a hard-wired intercom system. When everyone was set, the AD was ready to cue Jeannette and the audience, the cameramen and dolly grips were ready for action, and Jim Robinson, in the comfort of a large, cushioned chair, was in the control room, ready to view the production on the three separate monitors.

Robinson is a film director with no live television experience, but he quickly realized the difficulties a live television director faces. "Usually, with film, you go for one shot at a time, then you concentrate on editing. With live TV, you have to concentrate on three or more shots and make editing decisions at the same time. The Camera moves, and the edit decisions could make life complicated."

In order to use the FTF post-production process, the method of sound recording played a critical role on this production. Audio was recorded on the new Nagra IV SMPTE time code recorder (Nagra IV-TC). Time code was generated and recorded on the original sound rolls and displayed on a special time code slate. The slate was photographed at the head only of each sync take. This Nagra code will allow the sound assembly to be synced to the video dailies, and eventually, to the conformed film print.

Like the 16mm Panaflex, the Nagra IV-TC is a state-of-the-art machine. Chuck Fitzpatrick of Audio Services in Los Angeles says that the new Nagra has been out for about a year and is mostly used by people doing anything associated with music playbacks, such as music videos, stereo recordings, and live concerts. And like all state-of-the-art equipment, people tend to be overwhelmed by it all. "This is not your ordinary Nagra, and many experienced soundmen shy away from it because of its sophistication." But Chuck reminds us, all that is needed is proper training of soundmen and mixers.

In that regard, a round of applause goes out to "Travel Tips" soundman, Marcus (Doctor Audio) Pierce, who seemed to have mastered the Nagra IV-TC and its time code technology. It's a credit to Marcus that he became almost a forgotten figure. It's certain that he would have been the center of attention if there had been any sound or time code problems.

The television/video style film shoot wrapped Saturday night amidst a thunderstorm. The easy part of the project was finished, without any problems to speak of. What was lying ahead was the really innovative, post-production process that united our film shoot with the video and computer worlds; video workprint editing utilizing the new Film-Tape-Film (FTF) system.

Following principal photography, the camera negative was shipped to Monaco Labs in San Francisco for processing and preparation of the film for video transfer. Having a tight budget plus an existing off-line ¾" and ½" editing suite in their office, White Lion decided to use the FTF post-production process developed by One Pass Video of San Francisco.

One Pass takes the processed film from Monaco and makes silent ¾" video dailies with two data windows at the bottom of the screen. One window contains standard time code numbers (not the Nagra code) and the other window shows selected film data; film roll numbers and camera numbers in this case. The production sound is then synced to the video transfer via One Pass' ENS (Electronic Negative Synchronization) system, utilizing an intelligent two track recorder, computer, and customized CMX 34 software. Already, a savings in time and money is evident as there is no need at this time to transfer the original audio to mag film. The elimination of this step also saves a generation of sound.

Paul Reinhart of One Pass sees the major advantage of the FTF process as the speed and ease during editing, which is just what Jim Robinson and the White Lion people wanted. Another point in favor of the FTF process is that "you can get off the video train anytime you want and get back on film," according to Reinhart.

The most complicated procedure in the whole chain is the syncing of the video dailies with the audio track. After viewing the dailies at the White Lion facilities, indeed, the sound was out of sync with the picture by one or

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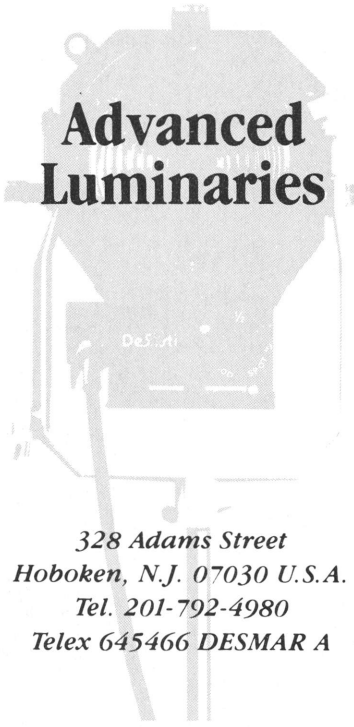

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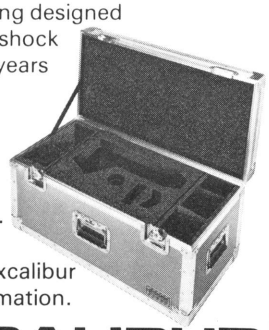

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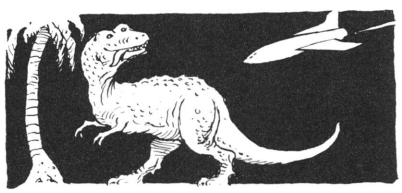

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two frames. But since the error was spotted at this early stage, there should be no problem later on down the line when camera original and sound are conformed.

White Lion took the ¾" video dailies and transferred them to VHS for editing on their Panasonic NV-8500 editing system. These resulting dailies replace the conventional film workprint and mag tracks.

As with all productions, the director and cinematographer must work closely together if they want to achieve a high quality product. On "Travel Tips," not only was this the case, as Jim and Mike are good friends, but they hold opposing views on video workprint editing, or to coin a new term, FTF editing.

Robinson is a strong supporter of FTF editing, even though most of his work is shot on film. FTF editing holds three obvious advantages for a production: (1) You can use existing equipment and personnel to edit in a very fast, cost efficient manner; (2) Several versions of each edited scene can be compared, previewed, and tested; and (3) No assistant editor is needed to handle huge amounts of film and mag. A fourth advantage FTF posting allows is that the original negative is never cut into traditional A and B rolls. The conforming is done with an optical printer, thus making for a cleaner negative and permitting easy recuts and revisions of the film to be made. Robinson says, "Film editors, on a flatbed, can zip through the footage and rapidly cut a film. That's fine if you're in Los Angeles or New York. But I'm not, I'm here in San Antonio." Plus, he like the idea of taking compact, lightweight video workprints and editing a film anywhere. He says he realizes that "FTF editing isn't perfect, but it does enhance the creative process."

After the video dailies are received and logged, Robinson and producer Marge Moody edit the series by first cutting each show to length using one camera angle only. The next step is to add the additional camera angles on a video only basis, then add the audience reaction shots and finally the MOS dramatic inserts. At each stage along the way, the show is easily previewed to all kind of groups and interviews . . . without additional screening room costs. "A preview is as easy as dropping a videocassette in the mail," says Executive Producer Wendell F. Moody, "and I can test an idea, such as a dramatized insert, by shooting a storyboard and cutting it into the video, *before* I spend a dime on production.

The most critical step in the FTF process comes at Interformat in San Francisco, where the VAX film latent edge number computer list is reprocessed, using customized software in their Edgesort computer to print lists showing each edit in relationship to the untouched, intact camera negative. Each take is pulled and re-assembled in edit order prior to a 16mm RAR (Rapid Access Recovery) print which is optically printed. Michael Hinton of Interformat says that the marrying of video, film, and computer technology enhances the whole film process and makes decision making quicker.

Meanwhile, based on the time code list, One Pass assembles a "checkerboard" A and B sound roll assembly, transferring the original ¼" sound rolls to multitrack. These sound takes will be synced to the picture by using the mathematical interface between the original Nagra code and the film's edge numbers. The key to this interface is the Nagra code, photographed from the electronic slate, by the three cameras, at the head of each take.

This A and B roll multitrack is finally transferred to 16mm mag film and synced to the RAR print, where the sound synchronization is checked and adjusted. SFX and music tracks are built conventionally in 16mm (music in 35mm stereo) and mixed in a standard stereo film mix to the RAR print.

While the sound is being mixed, Interformat begins the final steps involved in making an optical inter-positive print. The Edgesort computer program tells the optical printer its start and stop positions for each shot, as well as image size adjustments, color and density requirements, fader positions, and other effects. From this interpositive, a contact dupe negative is printed, and from that, a test print. Color corrections can be made at each step of this process. Finally, a mono optical soundtrack is printed and 16mm prints are made and distributed. A stereo 1" video master is also made for subsequent home video distribution in hi-fi stereo sound. △

Photographing the White Arctic

by Randy Love

The small twin-engine de Haviland Otter was making its third attempt to land in near-zero visibility at the little village of Toksook Bay, Alaska. The Bering Sea was frozen forty miles out, and was virtually indistinguishable from the hundreds of miles of windswept tundra over which we had flown.

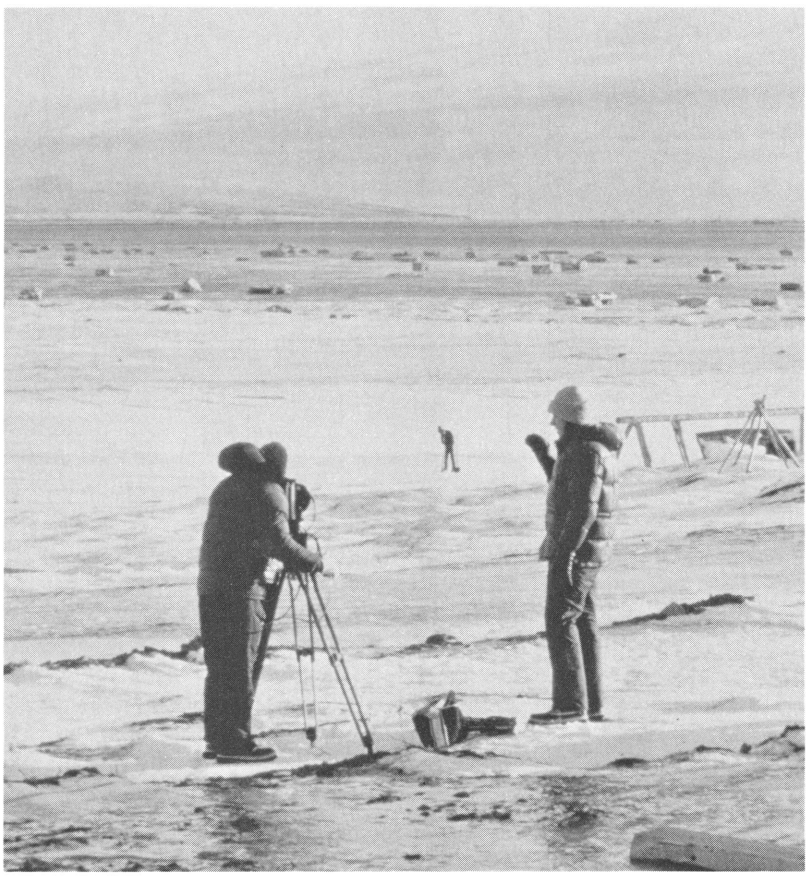
From the airplane I couldn't tell sky from ground – it was all white. Finally the Otter descended, and an orange runway cone drifted slowly past. The wheels touched down and we were in Toksook Bay.

The plane shuddered from the blowing snow even though its wheels were motionless on the runway. The runway was all ice as the pilot jumped down from the cockpit to open the passenger door. I saw a frantic look on his face as he was blown past the windows of the plane, his hands searching for a handhold that escaped his grasp. He was blown right by the door, but after several moments the door cracked open.

"Welcome to Toksook Bay," he said. "It's 80 degrees below zero!"

We piled our gear on the runway. The Otter took off for the next bush community, and there we were – 5 people, 48 pieces of film gear, and 12 boxes of groceries waiting in a 50-mile-per-hour wind for our Eskimo friends and one snowmobile to meet us. This was our third trip (including one in the summer) to southwest Alaska. We were following the seasonal activities of the Yup'ik Eskimos.

The Yup'ik Eskimos we were filming live about 400 miles west of Anchorage. Yup'iks are one of two native Eskimo cultures in that state. The film which director Larry Lansburgh and writer Gail Evenari set out to make is an ethnographic documentary showing the Yup'ik people, their culture, their subsistence lifestyle, and the inevitable pressures of outside influences.



Lansburgh and Love, Toksook Bay.

Photos by Jan Luchak

The Yup'iks are definitely modern Americans with satellite TV, VCR's, telephones, snowmobiles, and computers in their schools. However, these modern devices don't overshadow their culture, which goes back 3,000 years in southwest Alaska. Until only a few hundred years ago, no Yup'ik had ever had contact with a white man.

"Alaska: The Yup'ik Eskimos" is the first in a series of educational films for Chevron entitled "Spirit of the Land," which explores various Native American cultures.

Some people think that documentaries have to have a rough, crude look. Wrong. There are ways to use lighting and camera techniques to enhance production value, and still capture the spontaneity that documentary film making demands. To shoot a documentary with a good "look," I applied what I've learned from shooting theatrical and commercial productions.

As cinematographer, I put much thought into choosing equipment that would allow us to shoot in any weather condition that Alaska's winter could produce. The camera gear had to be able to function for extended periods in weather well below zero. I was given excellent advice by my friend Wade Bingham, who has shot numerous documentaries in Alaska and the Arctic. His advice on clothing, camera gear, barn-

Fishermen drift down the Kuskokwim River to net salmon. **Below:** ***A good place for a nap?***

eys, and virtually every aspect of shooting and keeping warm in cold climates was invaluable.

For a camera, I chose my own Aaton LTR 54 with a backup Aaton LTR 7 body. Lansburgh and I wanted to be able to move in and out of the extreme cold quickly. But having only one camera body meant that we would have had to wait about two hours for a camera just used outside to warm up enough to be used inside without the resulting condensation causing moisture damage to the equipment. We decided to go with two cameras, one for exterior and one for interior.

While we were still outside, we put our cold cameras, Nagras, and other sensitive equipment into plastic garbage bags, which we then tied off. When we came inside, where it could be as much as one hundred degrees warmer, the condensation instantly formed – but on the outside of the bag, not on the cameras and lenses. It took about two hours for the gear to warm up. Then it could be removed from the bag without moisture damage. Equipment in a case was not subject to the moisture problem, provided that the case was kept closed until the equipment inside warmed up to room temperature.

I took my regular complement of lenses, which include a 5.9mm, 8mm, 9mm high-speed, 9.5–57mm, 10–150mm, 15–300mm, and a 400mm. I also rented an additional 6-to-1 and a 15-to-1 for exterior use to avoid the condensation problem.

For lighting, I used an Ianiro 1K kit, Lowel 650 kit, C.P. bubblelights, and a set of Mole-Richardson inkies. In combination with Kodak high-speed 7294, this was plenty of lighting gear. We of course used 7291 for exteriors.

At Wade Bingham's urging, I had a heater barney made for the Aaton. The barney holds four pocket handwarmers. But the particular liquid fuel handwarmers we used turned out to be very unreliable. We often had only one heater running at a time, and once in a while we shot in above-zero weather without any barney at all. The Aaton performed well in the extreme cold, except once in a fierce blizzard, when blowing snow worked its way inside and shorted out the electronics in the base of the Aaton. The camera stopped running. After warming it up in a plastic bag for several hours, soundman Jim Mansen suggested that we disassemble it and dry it out with a hair dryer. Five minutes later, the Aaton was humming along again.

Cold weather shooting is extremely tough on nicad batteries. A battery that would normally last one hour at 70 degrees can last as little as three minutes in sub-zero weather. Both Mansen and I powered our gear by using batteries underneath our parkas, with the cables running outside. This let the nicads benefit from body warmth, and they lasted quite a while, considering the outside temperatures.

Each member of the crew was experienced in cold weather, but only Mansen and Lansburgh had done any extreme cold weather shooting. Gail Evenari, Jan Sluchak – the assistant cameraman and still photographer – and I are all avid skiers, but shooting in sub-zero weather was a new experience.

Lansburgh had directed and shot a film on cold-weather survival, so he counseled us carefully on the layering concept. It is as important to stay dry as it is to stay warm. If you become wet, you soon become cold. Dressed in layers, we could shed an outer layer if we became too warm from exertion. That avoided working up a sweat. We covered every square inch of skin. We had goggles, balaclavas, neoprene face masks, thinsulite gloves, outer gloves, expedition weight polypropalene underwear, snowmobile suits, double-insulated boots with wool liners, down jackets, down mittens, etc. You name it, we had it – and combined it in different ways depending on the conditions. Because we were properly dressed for the cold, we were not really uncomfortable even in the worst of conditions, which is amazing considering some of the extreme weather we faced. It is very simple – if you don't dress properly for the outside, you can't perform your basic film-related tasks, let alone be creative when your body is urging you to get inside and warm up.

Our longest cold weather shoot lasted all day when Mark John, our Yup'ik colleague in Toksook Bay, told us that he and his brother Simeon were going to check their blackfish trap. The trap was about two hours from the village by snowmobile. Larry, Jim and I bundled up and jumped on the snowmobiles. Jim, who had driven a snowmobile before, offered to drive one. Off we went across the frozen tundra with one machine pulling a big wooden sled with our camera gear packed inside. We often crossed small, frozen rivers and lakes which, because of the light snowfall, were quite icy. I could feel the snowmobile driven by Simeon start to spin and squirm on the sheets of ice. I turned around to see Jim and Larry on their snowmobile doing 360-degree spins at about 30 miles an hour. Simeon was laughing as he said that Jim was driving the only snow machine in the village without cleats for the ice. Their trip to the blackfish trap was spectacular.

Blackfish are a staple in the diet of most Yup'iks, and are often kept in a large tub in a house's entryway. They are kept alive and squirming until they are ready to be eaten. Then boiling water is poured over them, and they are held by their small tails and eaten.

A large pole stuck in the ice marked the location of the blackfish trap. We shot a sequence of Mark and Simeon digging through the ice and pulling out the trap, which is a chickenwire cylinder about two feet wide by six feet long. They emptied out about fifty pounds of fish. Several frozen gunnysacks were already at the trap site. When I asked what they were, Mark said that they contained blackfish which could not be taken home on their previous trip because the sled was too full. The bags of fish were left on the tundra – a Yup'ik deep freezer – ready for them when they returned.

Not all of our cold weather shooting was done outside. We shot a beautiful sequence of Yup'ik dancing in a traditional "men's house" in the village of Chevak, which is a short flight inland from Toksook Bay. The men's house was built halfway into the ground and had no heat. We had protection from the biting wind, but we still had to dress for the ten-degree temperature inside.

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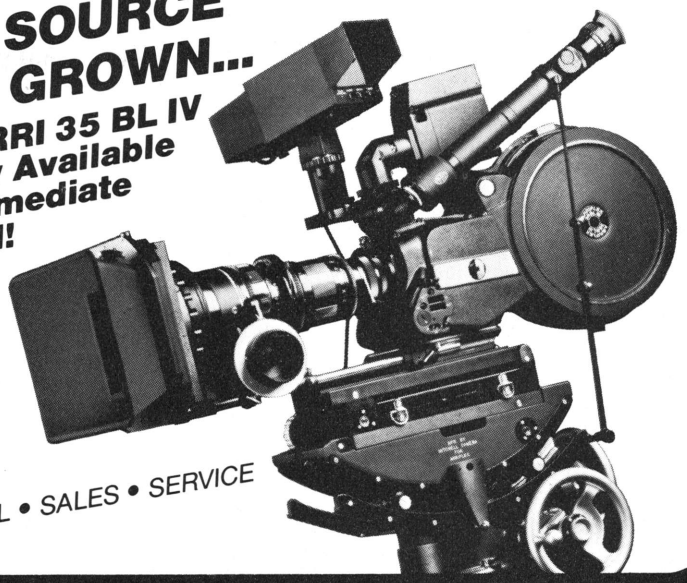

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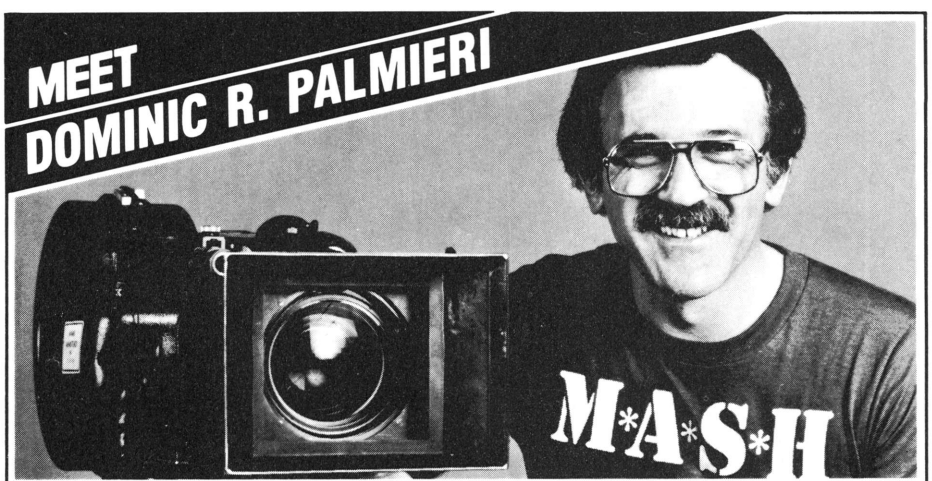

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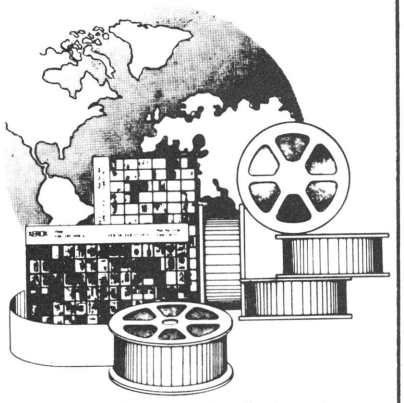

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Yup'ik dancing is wonderful, a very social event with approximately four male drummers and ten men and women dancing. They perform for themselves, with as big an audience as can fit the room.

There was no electricity in the men's house, so we ran extensions to a nearby house and bounced two 1K's with full MT2 off silver space blankets taped to the log ceiling. The resulting light was a beautiful amber-orange that embraced the performers and provided the most visually striking interior scene in the film.

There are no hotels in Toksook Bay or Chevak, so we slept in classrooms in each village's high school. The schools are modern, with complete gym facilities. We prepared our meals in the home economics room. Living in a high school during the school year is interesting. By 8 a.m. we had to have breakfast finished, dishes washed, sleeping bags rolled up, and personal gear packed away, no matter how late we'd shot the previous evening. Three nights a week the school was open to the community until 10 p.m. It was like living in a stranger's house in which 40 teenagers constantly walk through your bedroom and play basketball in the den. Fortunately, all the kids were very nice people, and the crew got along wonderfully. Several weeks without privacy could have taken its toll, but everyone had a great sense of humor and an intense dedication to the project.

There are those special moments in a documentary film that just seem to happen without planning, but a good documentary also relies heavily on research and scouting before the shoot. Writer, researcher and co-producer Gail Evenari did an excellent job of researching and making contact with Yup'ik community members. Her several scouting trips to southwest Alaska gave her a wealth of information.

Director and co-producer Lansburgh is a documentary director who can sense when a scene begins to take on a special life of its own. Jim and I had worked on Larry's Emmy-winning documentary "The Hidden Struggle," and the three of us were eager to work together again on the Yup'ik project.

With such a small crew, everyone had to do more than one job. Jan Sluchak is an experienced, well-rounded cameraman, who has worked many times with Larry as director of photography. For this job, Jan agreed to be assistant cameraman. He did a great job, cheerfully changing lenses and magazines in the difficult Arctic environment. Amazingly, Jan also found the time to shoot productions stills and portraits of the Yup'ik people. He also brought an emergency pack of medical supplies, food, flares, and space blankets. The pack would literally have been a life saver if we'd been stranded out on the tundra. Fortunately, we didn't have to use it.

Jim Mansen is not only an excellent sound man, but has many diverse talents. He helped with any activity from setting up an interior scene to acting as an assistant director for Larry. Jim has an innate sense of what makes good documentary material, and his ability to make the Yup'iks feel at ease while we were shooting was invaluable.

The brilliant white snow of the Alaskan winter often worked to our advantage when shooting interiors. Since the Yup'ik houses are very small, Larry and I wanted to see the windows in the shot, or at least to give the feeling of being near a window. The midday sun reflecting off the snow outside was like a giant white card as it softly filtered in through the windows. I used this light as my key source for many of the interior scenes. Sometimes a 1K with blue or foamcore provided the fill. Other times, there was enough bounce light in the room from our natural "key."

We shot one sequence of dinner being prepared in a very dark kitchen. With the available fuses and wiring, we couldn't use our regular complement of lights. There was a rather large window near the kitchen, so we put a piece of foamcore and a flexfill reflector near the window and bounced our exterior "key" off them to create an ultra-soft source for the scene. One 650-watt Omni with full blue and opal provided the fill. I shot all the daylight interiors with 7294 rated at ASA 250, without an 85 filter. Color correction was done in the lab.

The daylight of Alaska's winter is beautiful – very pastel, soft and romantic. The sun rose about 10 a.m. and set about 4 p.m. without ever going

higher than 20 degrees above the horizon. It was as if there were six hours of twilight. It was consistently the most extraordinary light I had ever seen. The film, Kodak 7291, responded well to the muted tones and pastel colors created by the winter daylight. One might see this type of light in California occasionally, but to be able to shoot in this light all day long was a cinematographer's delight.

Shooting in the winter in a remote Alaskan village does have one difficult aspect in addition to the weather – transportation.

First the long-range problems. Even though we were working in the United States, being on the Bering Sea meant that we were a long way from home. And, to get production value, we needed to take the right equipment, plus backups. We traveled with 1700 pounds of equipment in about 48 cases. Normal excess baggage fees would have put a big dent in Larry's budget.

But everything is negotiable when it comes to excess baggage. Don't wait until you show up at the airport with your mountain of gear. Call the airline business office in advance and use what leverage you have. We told the airlines that we'd be making several round trips with several people. They wanted to sell those tickets, so giving us a break on excess baggage made sense to them. Also, if you're doing an educational film, say so. It often makes a difference. When we showed up at the airport, Lansburgh Productions was in the computer, and they were ready for us.

The farther north we went, the smaller the airplanes were, the more people were accustomed to handling lots of equipment, and the fewer problems we had.

We were most concerned about Nagras, camera bodies, and lenses, so we always hand-carried them aboard airplanes.

Every time we changed planes, we talked our way into the airline's baggage department. There we counted our numbered cases before any of them had a chance to be re-routed to Ashtabula, Ohio, or Mexico City. If a case was missing, Jim Mansen had a clever way of figuring out which tag number (out of 48) belonged to it. During the initial check-in, he dictated each

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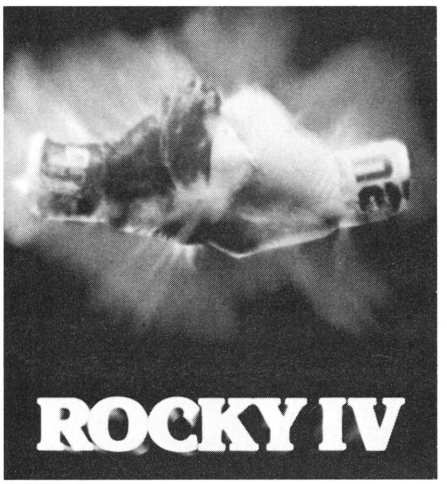

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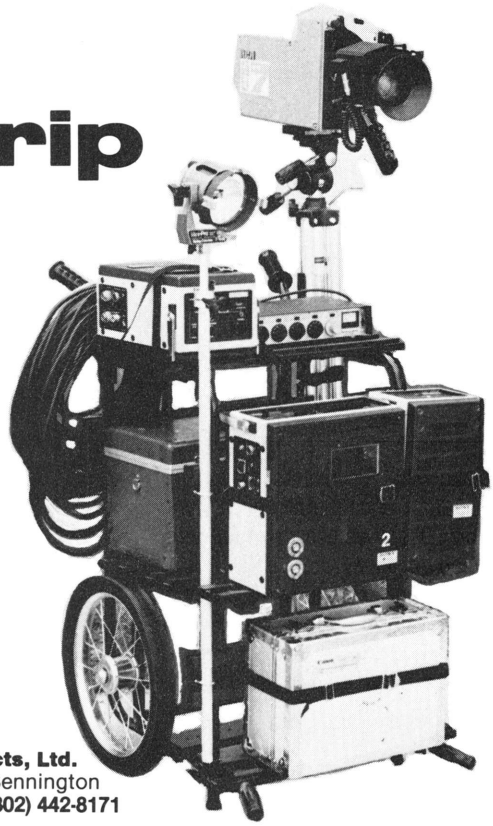

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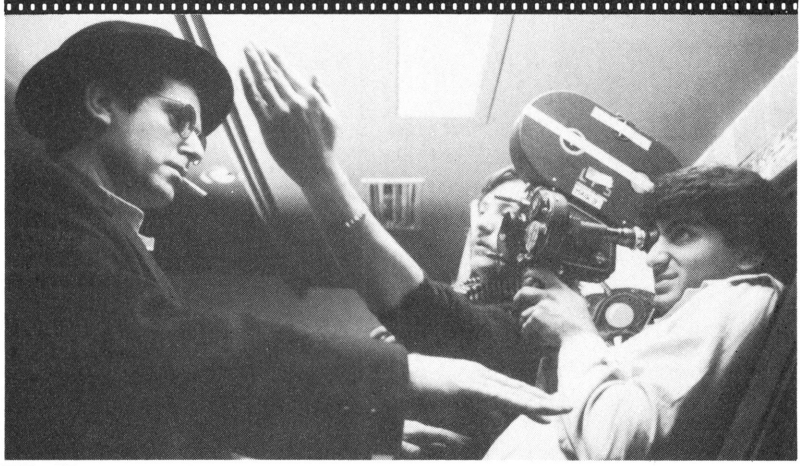

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case number and its tag number into a hand-held cassette recorder. Faster than writing everything down, it took only a minute. Then, if a case turned up missing, we knew what it was and whether or not we could get along without it until it was found. In any event, we could also begin the lost luggage search immediately.

Naturally, there are also short-range transportation problems peculiar to an Eskimo village on the Bering Sea. If we wanted to get from the general store on one side of the village to someone's house on the other, we couldn't just jump into a van and roar over to the new location. There are no vans in that part of Alaska, possibly because there are no roads. We went by snowmobile with our gear packed onto a wooden sled pulled along behind. The sled had no brakes or steering, and was entirely dependent on the skills of the driver to keep it from smashing into houses, people, and other snowmobiles. When going downhill, the driver had to speed up to keep tension on the tow rope, so the sled would stay behind. But more than once on every ride, the sled would start to pass the snowmobile. You can imagine my concern over the fact that virtually all my camera gear was on a runaway sled. Fortunately, Larry exhibited an extraordinary talent for steering the sled by standing on the rear runners and dragging a foot to steer. He often saved all our gear from disaster by diverting the sled at the last minute from all sorts of obstacles.

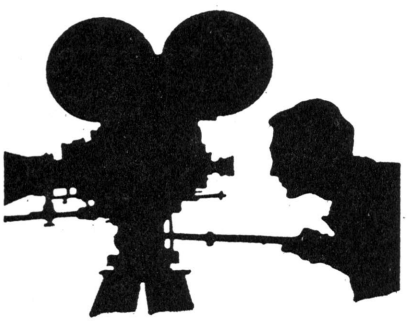
One of the most wonderful moments on the shoot occurred when the crew was explaining to a classroom full of high school students what our jobs were and how the complicated process of making a film evolves into the final product. After Jim explained his job as soundman, he called for a student volunteer. He put the Nagra's headphones on the Yup'ik youth and had him count from one to ten into the mike. Then he flipped the direct switch on the Nagra, and asked him to do it again. Of course, people have an amusing tendency to babble incoherently when they hear their own words delayed by a fraction of a second. Soon there was a line around the room, each student with the headset laughing and trying in vain to keep speaking. Laughter is contagious, and soon everyone

joined in. We made a lot of friends that way.

There is no way we could have made this picture without the enthusiastic help of the Yup'ik people.

They were wonderful to us – very hospitable and friendly. Their culture is based on a concept of community and sharing that I've found nowhere else in the world. I hope that the film "Alaska: The Yup'ik Eskimos" will portray them as they would like to be seen, so that others may catch a glimpse of this unique culture.

On our last day in Toksook Bay, I borrowed a snowmobile and set out along the shore of the frozen sea. After driving for miles in the crisp, clear weather, I stopped turned off the engine and savored the stark beauty of the tundra and the ice stretching before me. Shooting this film had been a great experience, and this was our last day. The tundra, which had seemed so forbidding and lifeless when we first arrived, now was different. I felt comfortable here – with the people and with the land. I reluctantly started up the snowmobile and began the long journey back to Toksook and finally back to San Francisco. The beauty of that moment on the tundra will always linger with me. △



Things to Come . . .

Our August issue will include a special history of Hollywood through the eyes of Cinematographers. The article will commemorate the opening of new Eastman Kodak facilities here and will trace the development of film through interviews with and opinions of cinematographers from Billy Bitzer to those of the present who keep the creative traditions alive.

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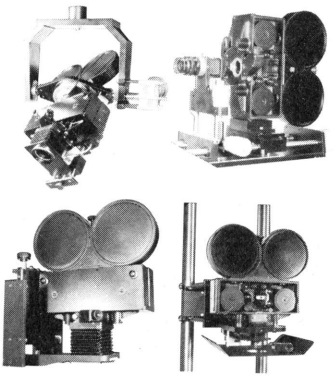

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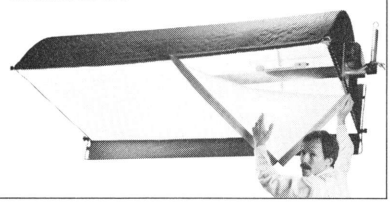

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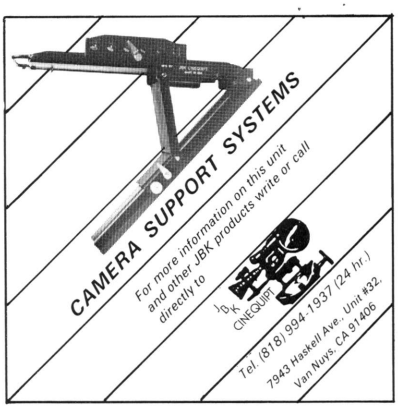
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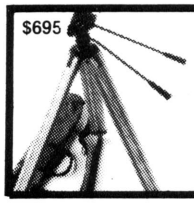

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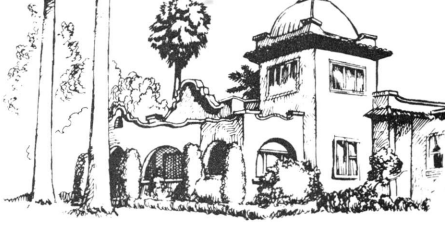
From the Clubhouse



"The Engineering and Electronic Aspects of the Contemporary Photographic Image" was the subject of the third 1986 State of the Art series of lecture-demonstrations. Edward M. DiGiulio, ASC associate member, and John Hora, ASC, were the featured speakers in what proved to be a startling demonstration of current experiments in film and electronic motion pictures.

DiGiulio, founder and president of Cinema Products and a well known inventor/engineer in the film industry, spoke in behalf of the 30 fps principle for future motion pictures. Filmed tests revealed that flicker, strobing during pan/tilt moves, and smearing of objects moving through a scene are significantly reduced by the increased speed of photographing and projecting. Also, the 30 frame rate provides a direct compatibility with the 30 frame scanning system used in television transmission, thus providing a superior image for transfer to tape and transmission.

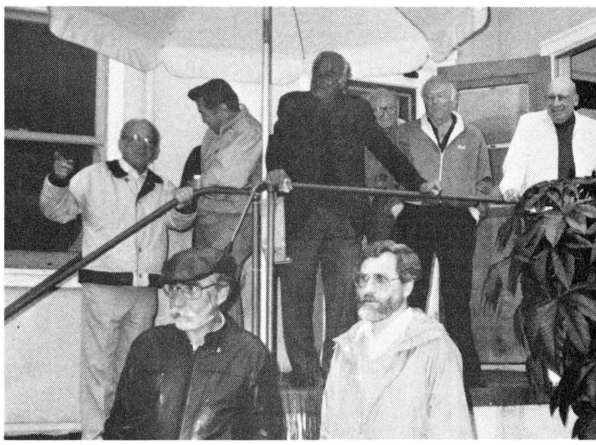
A recent short film photographed by Hora for the American Film Institute utilizing the latest high definition TV equipment from Sony provided evidence of the great strides made in this field in recent months. Hora answered questions about using the process, describing both the advantages and the problems he encountered. The improvements in HDTV were also evident in an Italian TV production which, like the AFI production was photographed electronically and transferred later to 35mm film.

• • •

Members of A.S.C. are involved in summer extension courses at UCLA this summer. Every Wednesday evening from July 23 through August 27, there will be classes pertaining to "The Role of the Cinematographer in Motion Pictures and Television" at the MGM studio screening room.

These lectures, screenings and discussions with guest speakers will be conducted by Gregory Lukow, film historian and critic. Included on the agenda from A.S.C. at various times will be Steve Burum, Stanley Cortez, Richard Edlund, Conrad Hall, Al Keller, Owen Roizman, Harry Wolf and Vilmos Zsigmond.

Subjects to be covered in depth include: black and white photography, visual effects, filming for television, shooting videotape, and the training and experience required by today's technology. Work opportunities for film students will also be discussed. Further information can be obtained from John G. Watson at UCLA marketing department.



A demonstration of the Musco light and the Shotmaker camera car drew a group of members to the clubhouse on a recent rainy Saturday. From left, Ben Colman, Robert Liu, Stanley Cortez, Fred Gately, Richard Rawlings, Al Keller, Joe Biroc. In front, Don Birnkrant and Jack Cooperman. **Below:** ***Crane extension from roof of camera car is demonstrated.***

In-Jokes—Jewels of the Trade

by John Clifford

They have enjoyed a long and dubious history. They exist in all forms of the arts including architecture, painting, sculpture, music, dance, theater, television, and, of course, the movies. They cause you to be stared at when you suddenly start laughing at something that no one else seems to find funny—or to feel that you're missing something as when someone else laughs at something that you don't see as funny. No, we're not talking about obscure jokes, but rather inside jokes.

Inside, or in-jokes are very often included in works of art. These in-jokes are communications between the artist and those "in the know." Those in the know could be friends of the artists, co-workers, or even devotees of the artist or the history of the art. To get an in-joke you must have special knowledge, thus the joke is often missed by the majority of the audience. Sometimes the in-joke is something the general audience might find amusing, but is hidden in such a way that only those who study the art can find the joke.

In motion pictures there are several categories of in-jokes. Names of people, places or things can refer to others. Examples of this type of in-joke is the name tag worn by Harrison Ford in *Apocalypse Now.* In that film, his nametag identifies him as G. Lucas, an obvious reference and nod to George Lucas. In Mel Brooks' version of the classic Ernst Lubitsch film *To Be or Not To Be,* a street sign is visible which identifies the street as "Kubelski Avenue." The original starred Jack Benny, and Benny's real name was Benny Kubeiski.

In last summer's hit comedy *Back to the Future,* the barn that Michael J. Fox crashes into in 1955 is owned by a Mr. Peabody, and his son is referred to as Sherman. This is a reference to the classic TV cartoon *Peabody's Improbable History* (part of the *Bullwinkle* shows), which featured a dog, Mr. Peabody, and his boy Sherman as time travelers.

Another kind of in-joke is reference to an earlier film that tests the viewer's knowledge of films. This type of joke is usually aimed at the film buffs in the audience. In the Steven Spielberg film *Gremlins* (a film loaded with in-jokes), set decorators not only recreated the look of Bedford Falls from *It's a Wonderful Life* and re-named it Kingston Falls, but many details of the set were references to earlier Spielberg films as well. The town's movie theater sports an interesting double bill for the real movie buff. The two films showing are: *Watch the Skies* (the original working title for Spielberg's *Close Encounters of the Third Kind*) and *A Boy's Life* (which was the original working title for *E.T. The Extra-Terrestrial*). In *Poltergeist,* when the family is finally moving out of the haunted house, thinking that all is well and the evil has been exorcised, film buffs are given an extra clue as to what is to come. JoBeth Williams' character makes the comment, referring to the beautiful morning, "Just smell the mimosa." In the 1943 Paramount film *The Uninvited,* the smell of mimosa foretold that an evil ghost was about to do something nasty. In Joe Dante's film from last summer, *Explorers,* he makes a reference to *Gremlins* in the form of a newspaper story with the headline "Kingston Falls Mystery Still Unsolved," which is being read by the father at the family breakfast table.

A third type of in-joke is the trademark. In the very earliest days of motion pictures, studios used a trademark as an integrated part of a scene. These trademarks, included to protect copyrights, could be found as framed photos on walls, etc. Today, certain filmmakers feel compelled to put a personal stamp on each of their films. The most famous of these are the "trademark cameos" of Alfred Hitchcock. But he is not the only director to so mark his films. George Lucas utilized the title of his first film *THX 1138* as an identifier in each of the subsequent films that he directed. THX 1138 can be found as a license plate in *American Grafitti,* and as the cell where Princess Leia was being held captive in *Star Wars.*

Another type of in-joke is the cameo of a person who is not normally seen in front of the camera. These people can be executives or creative people who are put into small roles as a tribute, and so their fellow workers can get a chance to see them. John Landis took this type of joke to extremes in his film *Into the Night,* giving roles to director friends such as Roger Vadim, Paul Mazursky, Paul Bartel, and even himself. He continued in this style with *Spies Like Us* giving small roles to Martin Brest, Costa Gavras, and Ray Harryhausen. Director Steven Spielberg can be seen in *Gremlins* riding by Hoyt Axton's phone booth and in *Indiana Jones and the Temple of Doom* along with George Lucas and cinematographer Douglas Slocum as monks at the airfield in the opening sequence. *2010* gives us a cameo look at author/screenwriter/scientist Arthur C. Clarke as a man feeding pigeons from a park bench in front of the White House.

My favorite example of the cameo in-joke is to be found in *Gremlins.* In the film, the young hero, Billy, is identified as a cartoonist. Later he is seen in Dorey's bar drawing a picture of Polly Holiday as a dragon with himself and Phoebe Cates as the young knight and his damsel in distress. From over his shoulder we hear a voice say, "Say, that's pretty good Billy," to which the character answers, "Thanks, Mr. Jones." As the cameo dollies back, we see that the man sitting at the bar next to him is none other than animation director Chuck Jones, creator of the Roadrunner, Pepe LePew, and other famous Warner characters. Also during this scene, on the television behind the bar, is a classic Jones Warner Brothers cartoon. Never again during the film is there any mention of the character drawing, nor is any interest in cartoons expressed.

An in-joke is not something devised just by the current crop of filmmakers. In the classic 1933 version of *King Kong* we are treated to a rare glimpse at producers Merian C. Cooper and Ernest Schoedsack as the pilots who try to destroy the giant gorilla who has gone ape on the Empire State Building.

– John Clifford

△

(The author is owner of Cinephile, which prepares graphics and typography for the entertainment services.)

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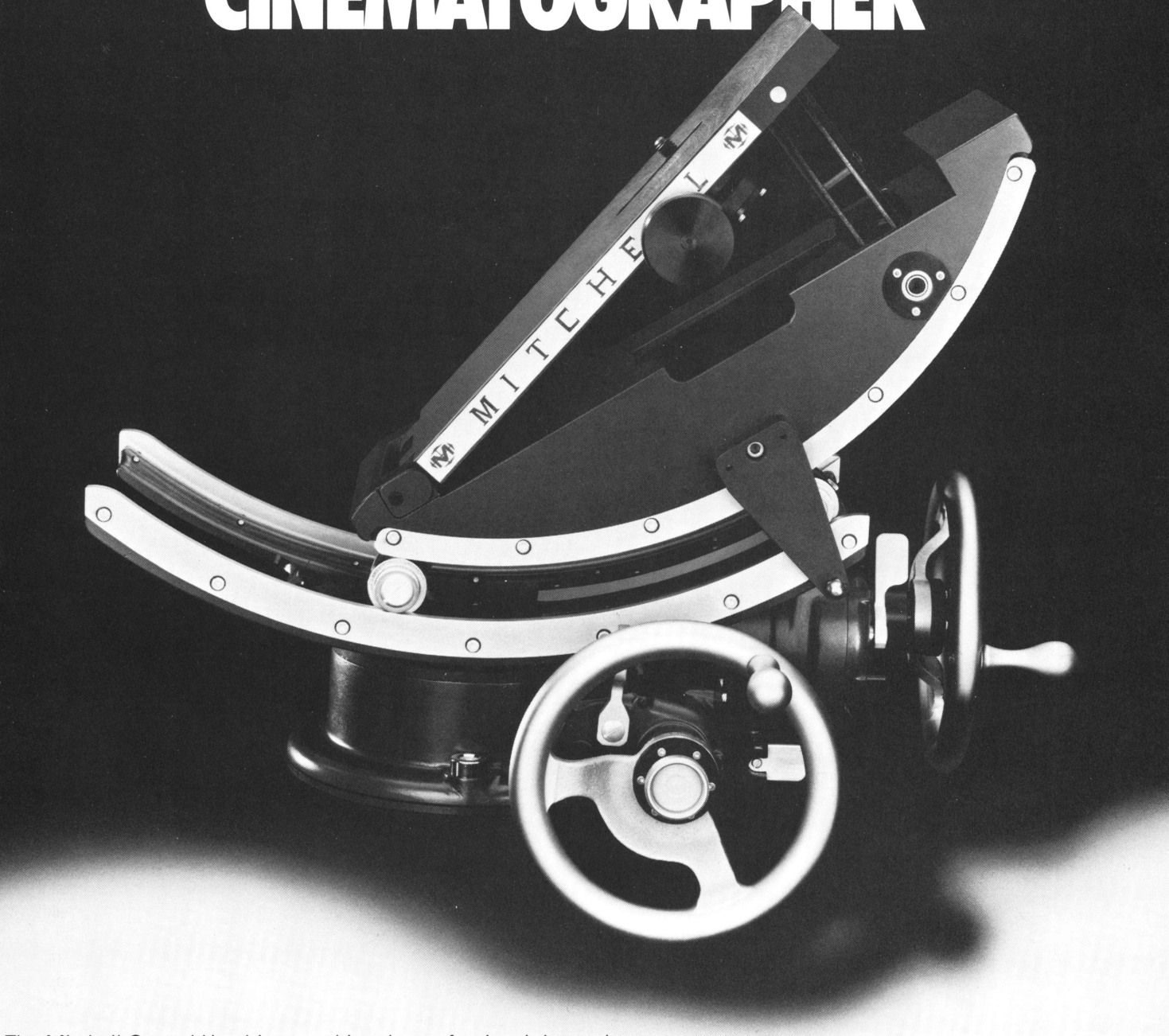

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